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THE REGISTRAR-GENERAL'S
STATISTICAL REVIEW
OF
ENGLAND AND WALES
FOR THE YEAR
1936

(New Annual Series, No. 16)

TEXT

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LONDON

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LIST OF CORRIGENDA IN THE STATISTICAL REVIEW
FOR THE YEAR 1936. PART I—MEDICAL

TABLE 17 (page 119).
MONMOUTHSHIRE URBAN DISTRICTS.
For Abersychan read Abertillery.

TABLE 24 (page 263).
COUNTY BOROUGH—WALSALL.
Cause 21. Other Respiratory. Age 15—Males *should read* 1.

TABLE 24 (page 289).
ADMINISTRATIVE COUNTY OF LEICESTER—AGGREGATE OF RURAL DISTRICTS.
Cause 33. Suicide. All Ages. Males *should read* 17.
Females „ „ 8.
Cause 34. Other Violence. All Ages. Males „ „ 43.
Females „ „ 24.
Age 0. Females „ „ 1.

TABLE 25. VIOLENT DEATHS, *should read* :—

				All Ages.	Under 1 year.	1—	5—	10—	15—	20—	25—	35—	45—	55—	65—	75 and upwards.
III	Page 340.	Transport .. ..	.. M.	5093	4	219	305	208	428	721	798	552	540	595	452	271
	Page 342.	5. Aerial Transport	.. M.	92	—	—	—	—	4	32	35	16	4	1	—	—

STATISTICAL REVIEW, 1936.

Note.—Of the tables referred to below, those numbered in Arabic will be found in "Tables, Part I—Medical," and those lettered in "Tables, Part II—Civil," while those numbered in Roman numerals appear in the text of this volume.

DEATHS.

The deaths of 495,764 persons were registered in England and Wales during 1936, 253,319 of these being males and 242,445 females.

This number is 3·8 per cent. above that for 1935.

Deaths of non-civilians, which numbered only 344, are now allocated to their administrative area of residence, and are included in all 1936 tables.

Death-Rates.—The death-rates used in this Review are of several kinds. The *crude* death-rate of a given region or locality represents the number of deaths which were registered during the year as belonging to that locality, after correction for transfers to the place of residence of the deceased, per 1,000 or million of the corresponding estimated population at the middle of the year. In this rate are included deaths at all ages whatsoever. For England and Wales as a whole the crude death-rate in 1936 was 12·1 per 1,000.

Specific death-rates relate either to mortality assigned to specific causes by the processes outlined at the commencement of the section "Causes of Death" (p. 54), or else to the mortality amongst selected groups of persons specified according to their sex, age, civil condition or occupation. Specific rates of the latter type are, with certain exceptions, obtained by relating the numbers of deaths registered as being those of persons in the selected group to the estimated number of such persons alive at the mid-year. Exceptions to this are the rate of infant mortality which is based upon the number of live births registered during the year, and certain death-rates connected with childbearing which, for reasons explained in the section on maternal mortality, are based upon the number of live and still-births registered during the year.

Standardized death-rates are attempts to express the mortality of a population of changing or abnormal age distribution by a single figure calculated in such a way that the changes or abnormalities in constitution do not appreciably affect it. The standardized rates used in this Review for England and Wales as a whole, whether for all causes or specific causes, are the rates which would result if each sex and age group of the census population in 1901 was subject to the death-rate at that age during the year to which the rate

applies.* On this basis of standardization the rate from all causes in 1936 was 9·2 per 1,000 living.

As the population of this country in 1901 included relatively few infants and old people it forms a standard exceptionally favourable to low mortality. Its use for this purpose accordingly yields comparatively low standardized rates all round. In order to provide standardized rates for this country comparable with those of countries using the standard recommended by the International Statistical Institute (a composite population made up of those of a large number of European countries in 1900 or 1901), rates calculated upon the latter by the method suggested by the Institute† are shown in Table XXII, as well as those based on the 1901 English standard, which is that used elsewhere in this Review. It will be seen that use of the less favourable standard increases the rate from 9·2 to 10·3 per thousand.

Neither standard is satisfactory for the population as now constituted owing to the rapid changes in the proportionate age distribution which have occurred since 1901, but a change to some standard of more recent date would only temporarily remove this objection at the cost of grave disadvantages to the continuity of recorded death-rates. More complicated rates such as the life-table death-rate, whilst they would be free from some of the faults of the standardized rate as at present defined, suffer from the disadvantage that they postulate conditions which are hypothetical and their precise meaning is difficult to visualize.

The important effect of the rapid changes at present proceeding in the age-constitution of the population on the crude and standardized death-rates is evidenced by the fact that from 1901, when both rates were 16·9 per 1,000 persons living, the crude rate declined to 12·1 in 1921, but since then has shown no appreciable fall, the average rate in 1921–25 being 12·2, in 1926–30 12·1, in 1931–35 12·0 and in 1936 12·1. The standardized rate however, which reached 11·3 in 1921, has continued to fall, being 9·2 in 1936.

Another method of expressing mortality by a single figure which is not influenced by the proportions at risk at different ages is to calculate an “equivalent average death-rate,”‡ that is to say an arithmetical mean of the rates at quinquennial groups of ages up to some convenient limit of age such as 65, this being equivalent to calculating a standardized death-rate at ages under 65 based upon a population equally distributed over the 13 age groups.§ This has

* For a full description of the methods employed for this “standardization” see The Registrar-General’s Decennial Supplement—1921, Part III (pages xxxiii—xlii). Standardized death-rates for the sexes separately quoted in this Review are based upon the age distribution of persons of undistinguished sex in the general population of England and Wales in 1901.

† *Annuaire International de Statistique*, 1917, p. viii.

‡ G. W. Yule; *Journal of Royal Statistical Society*, 1934. xcvi, Pt. I, 15.

§ If rates at all the quinquennial age groups are not available, twice the rate for the decennial group can be substituted without appreciable error.

the effect at present of giving too great weight to mortality at the higher ages 35–65, but the extent of that overweighting is rapidly diminishing year by year, whereas the underweighting of these ages by use of the 1901 standard population becomes continually more pronounced. This is made clear by the comparison of populations in Table I, the numbers in parentheses representing the standard population of persons at ages under 65 in 1901 if it were redistributed on the basis of equal weighting used in calculating the equivalent average death-rate.

Table I.—Population of Persons in England and Wales by Ages, per 10,000 at all ages, 1901, 1911, 1921, 1931, 1935 and 1936.

	1901		1911 Census.	1921 Census.	1931 Census.	1935 Esti- mated.	1936 Esti- mated.
	Stan- dard.	Uni- form.					
0–	1,143	(733)	1 069	877	749	697	686
5–	2 099	(1,467)	1,995	1,895	1,635	1,583	1,536
15–	1,958	(1,467)	1,805	1,756	1,734	1,600	1,607
25–	1,616	(1,467)	1,651	1,520	1,605	1,669	1,667
35–	1,228	(1,467)	1,344	1,411	1,368	1,404	1,423
45–	892	(1,467)	978	1,167	1,235	1,237	1,241
55–	597	(1,467)	637	769	932	997	1,010
65–	331	—	377	434	536	583	595
75–	121	—	126	151	182	204	209
85 and up ..	15	—	18	20	24	26	26
All ages ..	10,000	—	10,000	10,000	10,000	10,000	10,000

The equivalent average death-rates at ages under 65 for each sex give a simple measure, unaffected by age distribution, of the mortality up to that age, but the information given by these two figures needs to be supplemented by rates at 65–75 and 75 and over in order to gain a fairly complete picture of mortality.

In Table II the trends for each sex, since 1901, of (a) the crude death-rate, (b) the standardized death-rate, (c) the equivalent average death-rate under 65, and (d) the life-table death-rate (1,000 divided by the complete expectation of life at birth) are compared. The proportionate fall in the equivalent average death-rate under 65 has been only slightly greater than that of the standardized rate at all ages, notwithstanding that the improvement at the excluded ages over 65 has been very much less than at the earlier ages. Their simple definition and ready calculation, and the fact that they are not dependent upon an arbitrary standard population out of relation to present-day conditions, give these equivalent rates certain advantages over the standardized rates for separate causes, and these alternative rates have been given in several tables of this Review.

For most causes of death the standardized rates in Table 8 were below the average for the preceding five years, the comparison on this basis being specially favourable for scarlet fever, influenza, erysipelas, encephalitis lethargica, cerebro-spinal fever, tuberculosis, respiratory diseases (except chronic interstitial pneumonia and diseases of the accessory nasal sinuses), valvular disease of the heart, fatty heart, ill defined diseases of the heart and stomach, and suicide

Table II.—Trend of Crude and Corrected Death-Rates since 1901 by Sex ; Rates per 1,000 living and per cent. of the rate in 1911.

	Crude death-rate, all ages.		Standardized death-rate, all ages		Equivalent average rate under 65.		Life table death-rate, all ages	
	M.	F.	M.	F.	M.	F.	M.	F.

Rates per 1,000 living.

1901	18.1	15.8	18.5	15.5	16.2	13.2	—	—
1911	15.6	13.7	15.6	13.0	13.6	11.0	19.4	18.1
1921	13.0	11.3	12.5	10.2	10.5	8.5	18.0	16.8
1931	13.0	11.6	11.3	9.0	9.3	7.2	17.0	15.9
1932	12.7	11.4	10.9	8.7	8.9	6.9	—	—
1933	12.9	11.7	10.9	8.8	9.1	7.0	—	—
1934	12.5	11.1	10.4	8.3	8.8	6.7	—	—
1935	12.5	11.1	10.2	8.0	8.5	6.4	—	—
1936	12.9	11.4	10.4	8.2	8.7	6.4	—	—

Per cent. of rate in 1911.

1901	116	115	119	119	119	120	—	—
1911	100	100	100	100	100	100	100	100
1921	83	82	80	78	77	77	92	83
1931	83	85	72	69	68	65	87	82
1934	80	81	67	64	65	61	—	—
1935	80	81	65	62	63	58	—	—
1936	83	83	67	63	64	58	—	—

in both sexes, for tumours of the genital organs not stated to be malignant in females and for intestinal obstruction and general paralysis in males. The causes which showed appreciable increases over the preceding five-year average were leukæmia, myocarditis, cardiovascular degeneration, disordered action of the heart and angina pectoris in both sexes and cancer and acute myocarditis in males.

Adjusted Death-Rates for Local Areas.—In the Review for 1934 the methods employed prior to the year 1911 to correct local death rates for peculiarities in the sex and age constitutions of their populations were summarized.

In the Report for 1911 the indirect method of standardization was employed for every administrative area, a standardizing factor being calculated by applying the mean death rates in England and Wales during 1901–10 for each sex at separate ages to the local population as constituted in 1911 on the one hand and to the standard population of England and Wales in 1901 on the other. These factors, by which the crude death-rates were to be multiplied, were employed throughout the ensuing decade until they were recalculated by applying the mean national death rates in 1920–22 to the local census population in 1921 and the standard population of England and Wales in 1901. The 1921 series was not published in the annual Reports but the appropriate factor was furnished to each local Medical Officer of Health.

The disadvantages of continuing to relate the death-rates of local areas to a standard population so different in age constitution from the present population of England and Wales are plain from the fact that a corresponding standardizing factor for England and Wales as a whole for the year 1931 calculated by applying 1930–32 rates would be $\cdot 82$, compared with unity in 1901 and $\cdot 98$ in 1911. In consequence, neither the standardizing factor nor the resulting standardized death-rate for a local area calculated on the 1901 standard now conveys any information in itself, without first comparing it with the corresponding factor or rate for the country as a whole.

What is needed is a simple ratio which immediately conveys to the mind, without further calculations, the extent to which a local death-rate in the present year is in excess or defect of the rate expected, after taking into account (1) the sex and age constitution of its population as determined at the most recent census and (2) the mortality in the country as a whole during the present year. Whether the ratio be calculated by the direct or indirect method of standardization is of no practical importance provided that the standard rates used for the latter are those of a recent period of years.

This need has been met since 1934 by the calculation for every separate administrative area, county aggregate, county and region, as shown in Table 17, of an *areal comparability factor*, A.C.F. and a *ratio of adjusted death-rate to national rate or standardized ratio*.

The method of calculation is as follows:—Standard national death rates for the triennium 1930–32 at various sex and age groups are obtained by dividing the deaths registered in England and Wales in the three years by three times the census population. The standard rates are multiplied by the corresponding groups of the census population in 1931 of the area (as now defined). The groups employed may be conveniently reduced to 11 without seriously affecting the accuracy of the resulting factor, viz. persons under 5,

persons aged 5-34, males aged 35-54, 55-64, 65-74, 75-84, females of the same ages, and persons aged 85 and over. In certain areas where the population at 5-34 is known to be abnormally distributed owing to the presence of large schools or institutions for young people this age group is further subdivided. The sum of the resulting products divided by the total population gives the expected mean local death-rate at all ages in 1930-32. The ratio of the mean crude death-rate of England and Wales in 1930-32 to this local index rate is the "areal comparability factor," or "A.C.F." for the area as given in Column 13 of Table 17.

The "A.C.F." for 1936 relates to the population of the area as defined by boundaries during that year, but it is of course based upon the sex and age constitution of that area as it was determined at the last census of 1931. Provided that there have not been in the meantime changes in boundary important enough to disturb appreciably the relative age distribution of the population included, the same comparability factor may be applied also to the crude rates of the preceding years 1931 to 1935, or to the mean rate for a series of years around the census of 1931, and except where influenced by boundary changes in the future it will remain applicable until a new series of factors can be calculated on the basis of the next census.

The adjusted death rate for 1936 is obtained by multiplying the local crude death rate by the A.C.F. for that year, and the standardized ratio given in column 14 of Table 17 is the ratio of this adjusted death rate to the crude death rate of England and Wales in 1936. $\text{Adjusted local D.R.} = \text{A.C.F.} \times \text{crude D.R.}$

If it is desired to calculate *standardized death rates* based on 1901 standard population and comparable with those given for separate areas in the Annual Report for 1911, the adjusted death rate must be further multiplied by the time comparability factor (T.C.F.) or ratio of the standardized national rate (persons) to the crude national rate (persons) for the year in question. $\text{Standardized local D.R.} = \text{T.C.F.} \times \text{A.C.F.} \times \text{crude local D.R.}$ The numerical values of the T.C.F. for the years 1931 to 1936 are:—1931, .820; 1932, .808; 1933, .796; 1934, .790; 1935, .768; 1936, .759.

The assumption here involved is that the distribution by sex and age of the local population has undergone since the 1931 Census the same proportionate changes as has the distribution of the national population (the age changes in the national population between census years having been calculated annually since 1915 by adding births and deducting the deaths at various ages). Although this assumption is not necessarily true in the case of certain rapidly growing areas, it is the best approximation which can be made and is more satisfactory than the assumption hitherto made in local standardization for inter-censal years, namely that

the local sex and age distribution remained unchanged until it was again ascertained by the next census.*

The areal comparability factors in Table 17 can only be applied to mortality from all causes, although for causes of death whose incidence according to sex and age is similar to that for all causes combined the appropriate factor would be found to be very similar. For most causes, however, the specific factor, which can be calculated in the same manner by substituting death-rates from the specific cause in 1930–32 for the death-rates from all causes, differs from the factor tabulated. This is shown below by a few examples which were calculated for the county boroughs of Bournemouth and St. Helens in 1934.

Areal comparability factors, 1934, for—

	All causes.	Cancer.	Measles.	Diabetes.	Heart disease.	Respiratory tuberculosis.
Bournemouth ..	0.75	0.70	1.39	0.68	0.65	1.01
St. Helens ..	1.23	1.32	0.80	1.34	1.46	0.97

Whilst the cancer, diabetes and heart disease factors tend to resemble the factors for all causes, those for measles and phthisis are widely different.

The effect of standardization of the death rates of the county boroughs upon the amount of variation met with in these rates has been demonstrated in previous Reviews, where it has been shown that correction for differences in age distribution accentuates the contrasts between the mortalities of the northern industrial towns and the residential and agricultural towns instead of diminishing them. In 1936 the ratio of the crude death rate to the national rate ranged for the county boroughs from 0.83 for Coventry to 1.36 for Hastings, whilst the standardized ratio ranged from 0.81 for Oxford to 1.38 for Oldham. This is no new phenomenon, for in 1911, whereas the ratio of the crude death-rate to the national rate ranged from 0.72 (Eastbourne) to 1.38 (Liverpool and Middlesbrough), the ratio for standardized rates had a wider range from 0.75 (Eastbourne) to 1.50 (Middlesbrough).

Table III gives the standardized death rates for London, all county boroughs, other urban areas and all rural districts in each year 1911–1914, this rate being calculated by the direct method of standardization. For comparison with these are given the S.D.R.'s. for London Administrative County, all county boroughs, other

* No such correction for the changing age distribution from year to year was applied in the calculation of the standardized death rates for separate areas given in the Annual Reports for 1912, 1913 and 1914, the assumption being that the T.C.F. remained the same as in the last census year 1911. The national S.D.R. was, of course, corrected year by year for estimated changes in the age distribution. At that time, however, these changes were slow and the effect of this correction upon the 1912–1914 local rates is found to be slight; it reduces the average standardized rates for the 4 year period 1911–1914 by about 6 per 1,000. Wherever standardized death rates of separate areas are given in this Review the necessary correction has been applied, no matter to what year or years they refer (*see* Tables XCVI and XCVII).

urban districts and all rural districts outside Greater London in 1931-36, these rates being calculated by multiplying the crude death rate in Table 17 by the A.C.F. given in column 13 of the same table and by the T.C.F. for the year in question as given in the prefatory notes to the table. The exclusion of Greater London from the aggregates does not seriously affect the comparison with 1911-14, the S.D.R. for county boroughs being raised by 1 per cent. and that for other urban districts by 3 per cent. whilst the rural district rate is unaffected. At the foot of the table the S.D.R.'s have been introduced in the form of standardized (percentage) mortality ratios.

Table III.—Standardized Mortality at all ages in London, Urban and Rural Aggregates, and percentage excess in the County Boroughs compared with Rural districts, 1911-14 and 1931-36.

	England and Wales.	London Administrative County.	Aggregate of county boroughs.*	Aggregate of other urban districts.*	Aggregate of rural districts.*	Per cent. excess in county boroughs over rural districts.
Standardized Death Rates per 1,000 persons.						
1911 ..	14.2	15.3	16.6	14.0	11.4	+46
1912 ..	12.9	13.8	15.2	12.4	10.5	+45
1913 ..	13.3	14.3	15.6	12.8	10.7	+46
1914 ..	13.5	14.6	16.1	12.9	10.8	+49
<i>Average 1911-14</i>	<i>13.5</i>	<i>14.5</i>	<i>15.9</i>	<i>13.0</i>	<i>10.9</i>	<i>+46</i>
1931 ..	10.1	10.4	11.4	10.1	8.9	+28
1932 ..	9.7	10.1	10.7	9.7	8.7	+23
1933 ..	9.8	10.2	11.1	9.8	8.7	+28
1934 ..	9.3	9.8	10.3	9.2	8.4	+23
<i>Average 1931-34</i>	<i>9.7</i>	<i>10.1</i>	<i>10.9</i>	<i>9.7</i>	<i>8.7</i>	<i>+25</i>
1935 ..	9.0	8.9	10.2	9.1	8.2	+25
1936 ..	9.2	9.5	10.3	9.2	8.3	+24

Standardized (percentage) Mortality Ratios.†

1911-14 ..	100	107	118	96	81	—
1931-34 ..	100	104	112	100	90	—
1935 ..	100	99	113	101	91	—
1936 ..	100	103	112	100	90	—

* Outside Greater London from 1931 onwards.

† Percentage ratio of local adjusted to national crude death rate (1931-36) or percentage ratio of local standardized to national standardized death rate (1911-14).

The average excess of county borough over rural mortality, after allowance has thus been made for the greater average age of rural populations, was 46 per cent. in the period 1911-14. Twenty years later, in 1931-34, the average standardized death rate of the county boroughs had fallen from 15·9 to 10·9 or by 31 per cent., that of other urban areas from 13·0 to 9·7 or by 25 per cent., and that of rural districts from 10·9 to 8·7 or by 20 per cent., the excess of county borough over rural mortality being thus reduced to 25 per cent. In 1935 the county borough excess was 25 and in 1936 24 per cent. The excess of London over rural mortality fell from 33 per cent. in 1911-14 to 16 per cent. in 1931-34; it was 9 per cent. in 1935 and 14 per cent. in 1936. For the small towns the excess over rural mortality declined from 19 per cent. in 1911-14 to 12 per cent. in 1931-34 and was 11 per cent. in 1936. From these figures, it is apparent that owing to the more rapid reduction in urban than rural mortality the handicap imposed by urban residence is now little more than half as great as it was a quarter of a century ago.

The changes which took place in the standardized death rates of each separate county borough between 1911-14 and 1931-34 were dealt with in the section on "Standardized Mortality of the County Boroughs and Administrative Counties in 1931-34 compared with 1911-14," in the Review for 1934 (pp. 144-150).

Statistical Significance of Death Rates.—Whilst it is most desirable that conclusions should not be drawn from differences between death rates without inquiring first whether the differences have any statistical significance when account is taken of the numbers of deaths on which the rates are based, it is scarcely practicable to introduce into the many tables of death rates in the Annual Review any statistical measure of their significance. In Part I of this Review, however, all death rates based upon less than 20 deaths have been distinguished by *italic* type in order to convey a warning that such rates are subject to a specially large amount of variation in proportion to their magnitude owing to the small number of persons whose experience is being recorded, and in such cases a test of statistical significance should always be applied before making even a tentative deduction from rate differences. The necessity for such a test still holds for rates based upon numbers of deaths exceeding 20, but the likelihood that a given deviation from some expected value has arisen merely by chance diminishes as the size of the experience increases. In the Text of this Review an approximate test of significance has been applied to death rates wherever it has been deemed to be important.

Provided that the deaths are few in comparison with the population at risk (as is usually the case except at ages over 75) an approximate measure of the variability, or standard error, of the number of deaths is given by the square root of that number. This rule presupposes the independence of the deaths one of another and would

cease to be accurate if a large proportion of the recorded deaths was due to some factor, for instance, an explosion or an epidemic, affecting simultaneously a large number of persons in the population under consideration. This is rarely of importance in connection with death rates from all causes combined. For practical application it is generally more convenient to deduce the standard error from the actual deaths rather than from "expected" deaths based on some standard mortality, although in some circumstances the latter may have theoretical advantages as a basis for calculating the standard error. If the recorded deaths in a population group happen to be zero it is necessary if a standard error is required to calculate it from the square root of the deaths expected by applying some standard rate to the population. When comparison is being made with a standard rate, such as the national death rate or the mortality in all county boroughs, it may also be convenient in some cases to substitute the square root of the deaths expected if the standard rate were operative on the local population. It is not of much practical importance which of these measures of variability is used and the method which is most readily applicable by means of the data tabulated and which seems most suitable to the comparison required will be employed. What is of more importance is to remember that little or no useful purpose can be served by measuring the standard errors of crude death rates which are affected by differences in sex and age constitution of the populations. Before any test of the statistical significance of a difference between two rates can be usefully applied both rates must first be corrected to a common standard to remove the effects of peculiarities in the constitution of the population at risk.

The extent to which the number of deaths which happen to occur in populations of the same size and constitution in the same year may vary on account of random sampling, and the decrease in the proportionate amount of such variability as the size of the experience increases, may be seen from the following values of the standard error, expressed as a percentage of the number of deaths in each instance :—

No. of deaths	..	10	20	50	100	200	500	1,000
Standard error as								
percentage of No.								
of deaths	..	±32	±22	±14	±10	±7	±4	±3

A positive deviation from the average number of deaths amounting to as much as twice the standard error may occur about once in 44 times and the odds against such a deviation being due to chance would be about 43 to 1.* These would likewise be the odds against a negative deviation amounting to twice the standard error

* A positive deviation not less than the standard error may be expected about once in 6 times, and a positive deviation not less than $1\frac{1}{2}$ times the standard error about once in 15 times.

being due to chance. Taking this as a reasonable arbitrary limit of unlikelihood no deviation will be regarded as statistically significant unless it equals or exceeds twice the square root of the number of deaths. Thus, a number of towns, each of such a size as to produce on the average 50 annual deaths, may have in the same year numbers of deaths ranging from 36 to 64 without the differences having any hygienic significance (15 being a just significant variation from 50 according to the definition).

The application of this convention to determine the significance of differences between infant mortality rates or other *rates not requiring correction for age constitution* is a simple matter. The standard error of the rate R (per unit) is given by the ratio of the square root of the deaths D to the population at risk P , and since in this case $P=D/R$, the standard error of R can be expressed as R/\sqrt{D} and obtained by simply dividing the rate by the square root of the number of deaths. This last expression is equally applicable whether R is measured per unit, per cent. or per 1,000 population or births. Thus, for a town with an infant mortality rate of 69 per 1,000 births based on 25 deaths, the rate of 69 has a standard error $69/5$ or 13.8.

The same simple rule applies also to the ratios of registered to standard deaths or of adjusted to national death rates given in column 14 of Table 17, the standard errors of these (or of similarly calculated adjusted or standardized mortality rates) being most easily obtained by dividing the ratio or rate by the square root of the number of recorded deaths on which it is based. Thus, Table 17, page 73, shows that Cookham Rural District in Berkshire recorded in 1936, 121 deaths, giving an adjusted death rate .86 times the national rate. The standard error of the mortality ratio was therefore $.86/11$ or .078 and, since deviations less than twice the standard error are to be disregarded, variations from year to year within the limits $.86 \pm .16$, that is, between .70 and 1.02 have no statistical significance.*

The difference between two death rates can only be regarded as significant if it amounts to twice the standard error of that difference, that is, to twice the square root of the sum of the squares of the standard errors of the death rates.

In Table IV, columns 2, 6 and 10 give the differences between the standardized mortality ratio or infantile mortality rate of each

* If it is desired to compare an *adjusted death rate* with the national death rate and if it is thought preferable to use the deaths expected if the national mortality was operative as basis for the standard error, the alternative calculation is as follows. If S is the standard rate per 1,000, P the local population and C the local comparability factor (column 13 of Table 17), the "expected" deaths on the basis of the standard rate are given approximately by $SP/1,000C$ and the standard error of A (the local adjusted rate per 1,000) is measured by dividing the square root of this number by P and multiplying by 1,000 giving $\sqrt{1,000 S/PC}$. If A differs from S by less than twice the resulting figure it is not significantly different from it.

town and that of the *group* in which it is classed. Columns 3, 7 and 11 give the standard errors of these figures as measured by the mortality ratio or rate divided by the square root of the number of deaths on which it is based.

If the difference amounts to two or more times the standard error of that difference, as given by the formula above, the word "high"

Table IV.—Standardized Mortality at All Ages in 1935 and 1936 and Infant Mortality in 1936, in the Great Towns* grouped according to their population, separating those of Greater London.

Town.	Regional Letter.	1935				1936							
		Standardized Mortality figure (all ages).	Difference from Mortality figure for group.	Standard error of S.M.R.	Significantly above or below S.M.R. of group.	Standardized Mortality figure (all ages).	Difference from Mortality figure for group.	Standard error of S.M.R.	Significantly above or below S.M.R. of group.	Infant Mortality Rate (per 1,000 live births).	Difference from rate for group.	Standard error of I.M.R.	Significantly above or below I.M.R. of group.
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) <i>London Ad. County</i> ..	S E	99				104				66			
Battersea ..		102	+ 3	2.4		107	+ 3	2.5		59	— 7	5.3	
Bermondsey ..		114	+15	3.3	High	121	+17	3.4	High	60	— 6	6.3	
Bethnal Green ..		99	0	3.1		119	+15	3.4	High	98	+32	8.6	High
Camberwell ..		101	+ 2	1.9		104	0	1.9		59	— 7	4.3	
Chelsea ..		92	— 7	3.4	Low	96	— 8	3.4	Low	53	—13	9.1	
Deptford ..		99	0	3.0		105	+ 1	3.0		50	—16	5.7	Low
Finsbury ..		117	+18	4.2	High	126	+22	4.3	High	81	+15	9.8	
Fulham ..		100	+ 1	2.5		105	+ 1	2.5		64	— 2	5.5	
Greenwich ..		94	— 5	2.9		96	— 8	2.9	Low	51	—15	6.2	Low
Hackney ..		95	— 4	2.0	Low	104	0	2.1		63	— 3	4.6	
Hammersmith		105	+ 6	2.7	High	106	+ 2	2.7		60	— 6	5.6	
Hampstead ..		90	— 9	2.8	Low	88	—16	2.7	Low	66	0	7.9	
Holborn ..		109	+10	5.3		106	+ 2	5.2		62	— 4	14.6	
Islington ..		98	— 1	1.7		105	+ 1	1.7		62	— 4	3.6	
Kensington ..		97	— 2	2.1		97	— 2	2.1	Low	73	+ 7	5.7	
Lambeth ..		103	+ 4	1.8	High	102	— 7	1.7		59	— 7	3.9	
Lewisham ..		85	—14	1.8	Low	91	—13	1.8	Low	56	—10	4.4	Low
Paddington ..		102	+ 3	2.5		105	+ 1	2.5		72	+ 6	6.1	
Poplar ..		105	+ 6	2.6	High	115	+11	2.8	High	73	+ 7	5.9	
St. Marylebone		101	+ 2	3.1		104	0	3.0		75	+ 9	9.1	
St. Pancras ..		105	+ 6	2.2	High	110	+ 6	2.2	High	78	+12	5.8	High
Shoreditch ..		106	+ 7	3.3	High	116	+12	3.5	High	75	+ 9	7.7	
Southwark ..		113	+14	2.6	High	116	+12	2.6	High	59	— 7	5.1	
Stepney ..		113	+14	2.3	High	122	+18	2.4	High	99	+33	5.7	High
Stoke													
Newington		91	— 8	3.9	Low	90	—14	3.8	Low	45	—21	8.1	Low
Wandsworth		87	—12	1.4	Low	91	—13	1.4	Low	58	— 8	3.8	Low
Westminster		103	+ 4	2.7		100	— 4	2.6		64	— 2	7.8	
Woolwich ..		92	— 7	2.4	Low	99	— 5	2.4	Low	60	— 6	5.5	
(2) <i>Towns in London's Outer Ring with 100,000 or more population in 1931</i>	S E	90				92				52			
Croydon C.B.		83	— 7	1.7	Low	85	— 7	1.7	Low	41	—11	3.5	Low
Ealing ..		85	— 5	2.3	Low	83	— 9	2.2	Low	49	— 3	4.9	
East Ham C.B.		97	+ 7	2.6	High	97	+ 5	2.6		50	— 2	5.1	
Hendon ..		86	— 4	2.5		81	—11	2.4	Low	44	— 8	4.9	
Ilford ..		75	—15	2.2	Low	75	—17	2.1	Low	43	— 9	4.4	Low
Leyton ..		84	— 6	2.4	Low	85	— 7	2.4	Low	52	0	6.0	
Tottenham ..		94	+ 4	2.5		101	+ 9	2.5	High	52	0	5.2	
Walthamstow		87	— 3	2.5		91	— 1	2.5		42	—10	4.9	Low
West Ham C.B.		106	+16	2.0	High	110	+18	2.0	High	70	+18	4.1	High
Willesden ..		96	+ 6	2.2	High	98	+ 6	2.2	High	58	+ 6	4.4	

* Comprising the 125 Great Towns as shown in the Registrar General's Weekly and Quarterly Returns, with further distinction of each of the Metropolitan Boroughs in London Administrative County.

Table IV.—*contd.*

Town.	Regional Letter.	1935				1936							
		Standardized Mortality figure (all ages).	Difference from Mortality figure for group.	Standard-error of S.M.R.	Significantly above or below S.M.R. of group.	Standardized Mortality figure (all ages).	Difference from Mortality figure for group.	Standard error of S.M.R.	Significantly above or below S.M.R. of group.	Infant Mortality Rate (per 1,000 live births).	Difference from rate for group.	Standard error of I.M.R.	Significantly above or below I.M.R. of group.
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(3) Towns in London's Outer Ring with 50,000 but less than 100,000 population in 1931	SE	81				84				49			
Acton ..		94	+13	3.5	High	104	+20	3.7	High	67	+18	8.7	High
Barking ..		82	+1	3.5		82	-2	3.3		56	+7	6.8	
Beckenham ..		71	-10	3.0	Low	75	-9	3.0	Low	30	-19	5.7	Low
Brentford and Chiswick		88	+7	3.5	High	101	+17	3.7	High	49	0	7.7	
Dagenham ..		73	-8	3.1	Low	81	-3	3.2		56	+7	5.4	
Edmonton ..		82	+1	2.8		80	-4	2.7		44	-5	5.3	
Enfield ..		85	+4	3.1		83	-1	2.9		63	+14	6.8	High
Finchley ..		88	+7	3.4	High	83	-1	3.3		47	-2	7.5	
Harrow ..		77	-4	2.3		74	-10	2.1	Low	45	-4	4.0	
Heston and Isleworth		77	-4	2.8		79	-5	2.7		48	-1	5.7	
Hornsey ..		84	+3	2.6		90	+6	2.7	High	41	-8	6.0	
Mitcham ..		81	0	3.7		92	+8	3.8	High	48	-1	6.9	
Southgate ..		75	-6	3.2		80	-4	3.2		43	-6	8.1	
Twickenham		91	+10	3.0	High	91	+7	2.9	High	42	-7	5.5	
Wembley ..		73	-8	2.8	Low	75	-9	2.7	Low	45	-4	5.1	
Wimbledon ..		88	+7	3.4	High	86	+2	3.3		51	+2	9.0	
Wood Green		85	+4	3.7		92	+8	3.8	High	54	+5	8.8	
(4a) County Boroughs outside Greater London with 250,000 or more population in 1931	—	116				112				69			
Birmingham	M1	104	-12	1.0	Low	105	-7	1.0	Low	63	-6	2.0	Low
Bradford ..	N3	122	+6	1.9	High	123	+11	1.9	High	83	+14	4.6	High
Bristol ..	M1	91	-25	1.4	Low	98	-14	1.4	Low	48	-21	2.8	Low
Kingston-upon-Hull	N2	115	-1	1.8		115	+3	1.8		65	-4	3.3	
Leeds ..	N3	121	+5	1.5	High	120	+8	1.5	High	65	-4	3.0	
Leicester ..	M2	101	-15	1.9	Low	98	-14	1.8	Low	58	-11	3.9	Low
Liverpool ..	N4	132	+16	1.2	High	125	+13	1.2	High	76	+7	2.1	High
Manchester ..	N4	132	+16	1.3	High	129	+17	1.3	High	77	+8	2.6	High
Newcastle-on-Tyne ..	N1	123	+7	2.0	High	123	+11	2.0	High	89	+20	4.4	High
Nottingham	M2	110	-6	1.9	Low	112	0	1.8		89	+20	4.6	High
Portsmouth..	SE	100	-16	1.8	Low	97	-15	1.8	Low	50	-19	3.6	Low
Sheffield ..	N3	115	-1	1.5		114	+2	1.4		60	-9	2.8	Low
Stoke-upon-Trent ..	M1	129	+13	2.2	High	125	+13	2.1	High	74	+5	4.0	
(4b) County Boroughs outside Greater London with 100,000 but less than 250,000 population in 1931	—	114				113				64			
Birkenhead ..	N4	116	+2	2.7		114	+1	2.6		62	-2	5.0	
Blackburn ..	N4	129	+15	3.1	High	123	+10	3.0	High	65	+1	6.9	
Blackpool ..	N4	109	-5	2.7		115	+2	2.7		63	-1	7.0	
Bolton ..	N4	126	+12	2.6	High	122	+9	2.5	High	57	-7	5.1	
Bournemouth	SE	85	-29	2.1	Low	86	-27	2.1	Low	39	-25	5.3	Low
Brighton ..	SE	97	-17	2.1	Low	102	-11	2.2	Low	58	-6	5.4	
Coventry ..	M1	100	-14	2.3	Low	101	-12	2.3	Low	52	-12	4.2	Low
Derby ..	M2	104	-10	2.6	Low	103	-10	2.5	Low	62	-2	5.5	
Gateshead ..	N1	128	+14	3.2	High	124	+11	3.1	High	92	+28	6.7	High

Table IV.—*contd.*

Town.	Regional Letter.	1935				1936							
		Standardized Mortality figure (all ages).	Difference from Mortality figure for group.	Standard error of S.M.R.	Significantly above or below S.M.R. of group.	Standardized Mortality figure (all ages).	Difference from Mortality figure for group.	Standard error of S.M.R.	Significantly above or below S.M.R. of group.	Infant Mortality Rate (per 1,000 live births).	Difference from rate for group.	Standard error of I.M.R.	Significantly above or below I.M.R. of group.
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
<i>(4b)—contd.</i>													
Huddersfield	N3	122	+ 8	3.0	High	120	+ 7	3.0	High	64	0	6.7	
Middlesbrough	N2	133	+19	3.1	High	119	+ 6	2.9	High	73	+ 9	5.3	
Norwich ..	E	90	-24	2.4	Low	91	-22	2.4	Low	52	-12	5.6	Low
Oldham ..	N4	141	+27	3.2	High	138	+25	3.1	High	70	+ 6	6.4	
Plymouth ..	SW	105	- 9	2.1	Low	103	-10	2.0	Low	57	- 7	4.3	
Preston ..	N4	129	+15	3.2	High	129	+16	3.2	High	82	+18	7.0	High
*Rhondda U.D.	W1	130	+16	3.2	High	133	+20	3.2	High	58	- 6	5.4	
St. Helens ..	N4	128	+14	3.5	High	123	+10	3.4	High	56	- 8	5.3	
Salford ..	N4	131	+17	2.5	High	137	+24	2.5	High	90	+26	5.4	High
Southampton	SE	97	-17	2.1	Low	99	-14	2.1	Low	53	-11	4.4	Low
Southend-on-Sea ..	SE	94	-20	2.3	Low	88	-25	2.2	Low	45	-19	5.4	Low
South Shields	N1	122	+ 8	3.2	High	122	+ 9	3.2	High	87	+23	6.8	High
Stockport ..	N4	108	- 6	2.7	Low	115	+ 2	2.8		76	+12	6.5	
Sunderland ..	N1	125	+11	2.5	High	118	+ 5	2.4	High	72	+ 8	4.5	
Walsall ..	M1	107	- 7	3.1	Low	110	- 3	3.1		61	- 3	5.5	
Wolverhampton ..	M1	103	-11	2.6	Low	99	-14	2.5	Low	62	- 2	5.1	
Cardiff ..	W1	111	- 3	2.1		110	- 3	2.1		55	- 9	4.0	Low
Swansea ..	W1	112	- 2	2.5		115	+ 2	2.5		58	- 6	4.8	
<i>(c) County Boroughs outside Greater London with 50,000 but less than 100,000 population in 1931</i>													
	—	110				110				63			
Barnsley ..	N3	113	+ 3	4.0		118	+ 8	4.0	High	61	- 2	7.0	
Barrow-in-Furness ..	N4	122	+12	4.2	High	114	+ 4	4.0		74	+11	8.8	
Bath ..	SW	88	-22	2.8	Low	92	-18	2.9	Low	42	-21	7.4	Low
Bootle ..	N4	129	+19	4.1	High	133	+23	4.1	High	69	+ 6	6.4	
Burnley ..	N4	136	+26	3.7	High	126	+16	3.5	High	64	+ 1	7.6	
Bury ..	N4	129	+19	4.3	High	114	+ 4	4.0		59	- 4	8.6	
Carlisle ..	N2	107	- 3	4.0		113	+ 3	4.0		86	+23	10.9	High
Darlington ..	N1	109	- 1	3.6		111	+ 1	3.6		58	- 5	7.0	
Dewsbury ..	N3	114	+ 4	4.3		132	+22	4.6	High	69	+ 6	9.4	
Doncaster ..	N3	94	-16	3.5	Low	102	- 8	3.6	Low	52	-11	7.0	
Dudley ..	M1	109	- 1	4.2		109	- 1	4.1		71	+ 8	8.0	
Eastbourne ..	SE	88	-22	3.3	Low	87	-23	3.2	Low	46	-17	8.4	Low
Exeter ..	SW	88	-22	3.1	Low	93	-17	3.1	Low	62	- 1	8.2	
Gloucester ..	M1	101	- 9	3.8	Low	98	-12	3.6	Low	55	- 8	8.1	
Gt. Yarmouth	E	94	-16	3.6	Low	93	-17	3.5	Low	60	- 3	9.0	
Grimsby ..	E	109	- 1	3.3		103	- 7	3.1	Low	67	+ 4	6.3	
Halifax ..	N3	123	+13	3.3	High	124	+14	3.2	High	68	+ 5	7.5	
Hastings ..	SE	92	-18	2.9	Low	91	-19	2.8	Low	42	-21	7.3	Low
Ipswich ..	E	86	-24	2.7	Low	94	-16	2.8	Low	46	-17	5.7	Low
Lincoln ..	E	99	-11	3.6	Low	103	- 7	3.6		52	-11	8.0	
Northampton	M2	90	-20	2.8	Low	97	-13	2.8	Low	38	-25	5.6	Low
Oxford ..	SE	83	-27	2.8	Low	81	-29	2.7	Low	45	-18	5.7	Low
Reading ..	SE	94	-16	2.7	Low	94	-16	2.6	Low	49	-14	5.8	Low
Rochdale ..	N4	125	+15	3.5	High	131	+21	3.5	High	69	+ 6	7.9	
Rotherham ..	N3	113	+ 3	4.0		113	+ 3	3.8		73	+10	7.7	
Smethwick ..	M1	108	- 2	3.6		100	-10	3.4	Low	60	- 3	6.9	
Southport ..	N4	104	- 6	3.1		103	- 7	3.0	Low	51	-12	8.0	
Tynemouth ..	N1	115	+ 5	4.0		107	- 3	3.8		66	+ 3	7.4	
Wakefield ..	N3	115	+ 5	4.2		120	+10	4.2	High	82	+19	9.7	
Wallasey ..	N4	107	- 3	3.0		106	- 4	3.0		67	+ 4	7.1	

* Included for convenience in this group as the only town outside Greater London other than a County Borough with 1931 population over 100,000.

Table IV.—*contd.*

Town.	Regional Letter.	1935				1936							
		Standardized Mortality figure (all ages).	Difference from Mortality figure for group.	Standard error of S.M.R.	Significantly above or below S.M.R. of group.	Standardized Mortality figure (all ages).	Difference from Mortality figure for group.	Standard error of S.M.R.	Significantly above or below S.M.R. of group.	Infant Mortality Rate (per 1,000 live births).	Difference from rate for group.	Standard error of I.M.R.	Significantly above or below I.M.R. of group.
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
4(c)— <i>contd.</i>													
Warrington..	N4	123	+13	4.0	High	124	+14	3.9	High	90	+27	8.4	High
WestBromwich	M1	119	+ 9	3.8	High	116	+ 6	3.6		74	+11	7.1	
West Hartlepool	N1	123	+13	4.0	High	117	+ 7	3.9		54	— 9	6.5	
Wigan ..	N4	143	+33	4.2	High	128	+18	3.9	High	82	+19	7.5	High
Worcester ..	M1	104	— 6	3.9		101	— 9	3.8	Low	55	— 8	8.3	
York ..	N3	98	—12	3.1	Low	100	—10	3.1	Low	72	+ 9	7.3	
MerthyrTydfil	W1	141	+31	4.5	High	129	+19	4.3	High	79	+16	9.2	
Newport ..	W1	117	+ 7	3.4	High	110	0	3.2		64	+ 1	6.3	
(4d) County Boroughs outside Greater London with less than 50,000 population in 1931	—	109				103				54			
Burton-upon-Trent ..	M1	107	— 2	4.3		100	— 3	4.1		64	+10	9.6	
Canterbury ..	S E	94	—15	5.1	Low	88	—15	4.9	Low	42	—12	11.0	
Chester ..	N4	122	+13	5.2	High	118	+15	4.8	High	51	— 3	8.7	
(5) Other Towns outside Greater London with 50,000 but less than 100,000 population in 1931	—	108				99				47			
Ashton-under-Lyme ..	N4	129	+21	4.9	High	129	+30	4.8	High	62	+15	10.4	
Cambridge ..	E	79	—29	2.9	Low	79	—20	2.8	Low	33	—14	6.4	Low
Cheltenham..	M1	85	—23	3.3	Low	90	— 9	3.3	Low	39	— 8	7.5	
Chesterfield..	M2	113	+ 5	4.1		108	+ 9	4.0	High	60	+13	7.6	
Crosby ..	N4	101	— 7	4.0		107	+ 8	4.0	High	56	+ 9	8.6	
Gillingham ..	S E	101	— 7	3.8		90	— 9	3.5	Low	38	— 9	6.4	
Hove ..	S E	93	—15	3.1	Low	95	— 4	3.1		36	—11	8.0	
Luton ..	S E	96	—12	3.3	Low	88	—11	3.0	Low	35	—12	5.0	Low
Newcastle-under-Lyme	M1	116	+ 8	4.3		107	+ 8	4.0	High	63	+16	7.9	High
Poole ..	S W	88	—20	3.2	Low	89	—10	3.1	Low	51	+ 4	7.1	
Stanley ..	N1	119	+11	7.3		112	+13	7.0		72	+25	14.7	
Stockton-on-Tees ..	N1	116	+ 8	4.1		104	+ 5	3.8		47	0	6.0	
Stretford ..	N4	106	— 2	4.1		109	+10	4.1	High	37	—10	7.0	
Swindon ..	S W	91	—17	3.6	Low	102	+ 3	3.8		47	0	7.7	
Thurrock ..	S E					86	—13	4.0	Low	62	+15	8.4	
Watford ..	S E	81	—27	3.4	Low	85	—14	3.3	Low	39	— 8	6.4	

or “ low ” is entered in columns 4, 8 or 12 to indicate the significant excess or defect over the group rate. If it is desired to make comparison with the national mortality instead of with the group rate, 100 is subtracted from the S.M.R. or 59 from the infant mortality rate, and if the resultant excess or defect amounts to twice the standard error given in columns 3, 7 or 11 it may be regarded as significant.

Standardized Mortality of the Great Towns, grouped according to their population.

In Table IV standardized mortality ratios (100 times the ratio of the adjusted death rate to the national rate as given in column 14 of Table 17) are given in columns 1 and 5 for 1935 and 1936 for each of the 152 great towns. These towns comprise each metropolitan borough and each county borough, whatever the population, together with every other town whose population was 50,000 or over at the 1931 census. They have been arranged in three groups of Greater London urban areas, namely, the metropolitan boroughs, outer ring towns of 100,000 or more population in 1931, and outer ring towns of between 50,000 and 100,000 population; four groups of county boroughs outside Greater London, with populations of 250,000 and over, 100,000 to 250,000 (including Rhondda urban district in this group), 50,000 to 100,000, and below 50,000 respectively; and a group of other towns outside Greater London having populations between 50,000 and 100,000. The standardized mortality ratios for each of the eight groups have been calculated and are shown in the Table. These have been summarized below, and for comparison the ratios for the residual aggregate of other urban districts or small towns outside Greater London with populations below 50,000 in 1931 have been added (the S.M.R. for this group being the same as the national figure both in 1935 and 1936).

		1935	1936
England and Wales (all areas)	.. ..	100	100
County boroughs outside Greater London	{ 250,000 and over	116	112
	{ 100,000 but under 250,000	114	113
	{ 50,000 but under 100,000	110	110
	{ Under 50,000	109	103
Other towns out- side Greater London	{ 50,000 but under 100,000..	108	99
	{ <i>Urban districts under 50,000</i>	<i>100</i>	<i>100</i>
London Administrative County	.. ..	99	104
Towns of Lon- don's outer ring	{ 100,000 and over	90	92
	{ 50,000 but under 100,000	81	84

In 1935 the county boroughs presented a regular decrease in the S.M.R. with diminishing size as measured by population, and this was also true in 1936 except that the group of largest towns had a slight advantage over the group next in size. The Greater London rates were also highest for the large population units in each year. Urban areas outside Greater London without county borough status but with populations between 50,000 and 100,000 returned an average mortality below that for the county boroughs of the same size, both in 1935 and 1936.

The method of grouping here used cuts across the regional grouping but has the advantage of bringing together for comparison

towns of similar size and of not excluding from separate consideration those large urban areas, such as Rhondda, which do not happen to have become county boroughs. It takes no account, however, of combinations of smaller contiguous urban areas whose total population exceeds 50,000 nor of the fact that in many instances several of the large towns are really contiguous and their combined population would place them in another group. Regional sub-grouping of the towns of similar size can be readily carried out by means of the regional index letters in Table IV and a comparison of the northern towns with those in the south-east, east or south-west is made below for populations of two sizes by taking the simple arithmetic mean of the mortality figures of the areas included.

Average S.M.R. of towns of the size and position specified.

	50 to 100 thousand population.		100 to 250 thousand population.	
	1935	1936	1935	1936
Northern regions :				
County boroughs	117	117	125	123
Other towns	114	112	—	—
South-East (excluding Greater London), East and South-West :				
County boroughs	92	93	95	95
Other towns	90	90	—	—

These ratios show that county borough status, with all which that implies in methods of health administration, does not necessarily result in lower death rates than obtain in similar towns without such status, but it must be remembered that most of the county boroughs are old established industrial towns with densities of population usually higher than in the other towns, many of which have grown out of suburban or residential areas. The figures above also provide no support to the hypothesis that from the standpoint of resulting healthiness there is some optimal population for towns which is intermediate between the smallest and the largest, for as judged by the standardized death rates the healthiness of towns outside Greater London tends to improve progressively with diminishing size.

Table IV further shows for each town the amount by which the mortality differed from that of the group as a whole and in the adjacent column gives a measure by which it can be at once seen what importance, from a statistical standpoint, may be attached to that difference, or alternatively to the excess or defect from the national or any other rate. The criterion by which the significance of differences is measured is explained in the previous section; the words "high" or "low" in Table IV indicate for a town that the

difference between its mortality and that of the group in a positive or negative sense is at least twice as great as its standard error and is unlikely to have arisen merely from fluctuations due to a small population.

Of the metropolitan boroughs, Finsbury, Stepney, Bermondsey, Bethnal Green, Shoreditch, Southwark, Poplar and St. Pancras, arranged in descending order of their mortality ratios, gave rates significantly above the level of 104 for London as a whole in 1936, and on the other hand Chelsea, Greenwich, Hampstead, Kensington, Lewisham, Stoke Newington, Wandsworth and Woolwich had significantly low rates. In London's outer ring, West Ham, Tottenham and Willesden gave significantly high rates compared with the group figure of 92 and those for Acton, Brentford and Chiswick, Mitcham, Wood Green, Twickenham and Hornsey were significantly in excess of the group figure of 84. Of the largest county boroughs, Manchester, Liverpool, Stoke-on-Trent, Newcastle-on-Tyne, Bradford and Leeds, arranged in descending order, gave high rates and Birmingham, Bristol, Leicester and Portsmouth gave low rates. Of the towns ranking next in size, Oldham, Salford, Rhondda, Preston, Gateshead, Blackburn, St. Helens, Bolton, South Shields, Huddersfield, Middlesbrough and Sunderland, arranged in descending order, gave rates significantly above the group rate of 113, whilst the south coast towns and Southend, Coventry, Derby, Norwich and Wolverhampton had low rates. The smaller towns of between 50 and 100 thousand population outside Greater London had mortalities ranging from 81 for Oxford to 133 for Bootle, twelve northern towns and Merthyr Tydfil giving rates significantly above, whilst three northern and twenty other towns gave rates significantly below the group level.

Mortality at different portions of the year.—Table 4 gives the quarterly deaths for each sex, and death rates per 1,000 persons in decennial periods from 1841 to 1930 and each of the last 10 years. From that table the present stability of the death-rate in the last three quarters of the year is apparent, for the average mortality in these quarters during 1927–36 ranged only from 10·7 to 11·4, being 11·2 in 1936, while the death-rate in the March quarter fluctuated between 13·2 in 1935, and 20·9 in 1929 and was 15·1 in 1936.

The contributions of the four quarters to the year's mortality in quinquennial periods since 1851, and in each year since 1931, are shown in Table V. It should be noted, however, that the crude quarterly mortalities in Tables V and 4 do not measure the real improvement since 1901 owing to the increasing average age of the population, but the ratios in the right hand portion of the table would not be changed if the rates were standardized.

The September quarter showed the lowest rate of the four quarters in each quinquennium except 1896–1900, when its mean rate was exceeded by those of the June and December quarters.

The March quarter has registered the highest rate of the four quarters in each quinquennium, but the relative excess over the September quarter has varied greatly

The numbers of deaths from different causes which occurred in each of the first nine months of 1936 and in the last three months of 1935 are set out in Table 23.

Table V.—Quarterly Death-rates in each quinquennium 1851–1935 and in each year 1931 to 1936, with ratio to yearly rate taken as 100.

			Death-rate per 1,000 living.				Ratio to yearly rate taken as 100.			
			March.	June.	September.	December.	March.	June.	September.	December.
1851–55	...	...	25.3	22.5	21.0	21.9	111	99	93	96
1856–60	...	...	24.1	21.6	19.6	21.9	111	99	90	100
1861–65	...	...	25.7	22.0	20.4	22.3	114	97	90	99
1866–70	...	...	24.7	21.6	21.5	22.0	110	96	96	98
1871–75	...	...	24.3	21.1	20.4	22.1	110	96	93	100
1876–80	...	...	23.2	20.7	18.8	20.6	112	100	90	99
1881–85	...	...	21.4	19.3	17.6	19.4	110	99	91	100
1886–90	...	...	21.7	18.0	17.0	18.9	115	95	90	100
1891–95	...	...	21.8	18.5	16.4	18.1	117	99	88	97
1896–1900	...	...	19.5	16.6	17.5	17.2	110	94	99	97
1901–05	...	...	17.9	15.2	14.9	16.1	112	95	93	101
1906–10	...	...	17.4	14.1	12.6	14.7	118	96	86	100
1911–15	...	...	16.9	13.7	12.7	14.0	118	96	89	98
1916–20	...	...	17.5	13.5	10.9	15.8	122	94	76	110
1921–25	...	...	15.1	11.9	9.6	12.0	124	98	79	98
1926–30	...	...	15.9	11.5	9.4	11.6	131	95	78	96
1931–35	...	...	15.4	11.5	9.6	11.7	128	96	80	98
1931	...	...	16.5	11.5	9.6	11.7	134	93	78	95
1932	...	...	15.4	11.6	9.7	11.5	128	97	81	96
1933	...	...	17.1	10.8	9.4	12.0	139	88	76	98
1934	...	...	14.6	11.8	9.6	11.2	124	100	81	95
1935	...	...	13.2	12.0	9.8	12.0	113	103	84	103
1936	...	...	15.1	11.8	9.7	12.0	125	98	80	99

Mortality of each sex.—The excess of male over female standardized mortality in 1936 was 27 per cent., compared with 27 in 1935 and 25 in 1934. Comparing the sex rates for the quinquennium 1931–35, age by age, male excess occurred at each age group except 10–15 and was greatest at 45–55. In 1936 male excess was present at every age and was greatest at 55–65. The sex ratios recorded in Table VI are derived from Table 5, with substitution for 1911–15 and 1916–20 of rates based on the total male population and all deaths registered in this country for those in Table 5, which refer to civilian males only in those periods.

At ages under 5 male excess increased continually from 15 per cent. in 1866–70 to 26 in 1931–35. At 5–10 a small female excess

during 1891–1910 gave place to a male excess of 10 per cent. in the last two quinquennial periods and 17 per cent. in 1936, when the death rate of the girls was the lowest ever recorded. At 10–15 there has been no appreciable difference between the sexes since 1921–25 but in 1936 the mortality of girls of this age also reached a low record with resultant male excess of 18 per cent. At 15–20 a reversal of the sex ratio took place at the end of last century and the male excess now ranges between 5 and 14 per cent. At 25–35, the male excess, after reaching a maximum in 1911–20, is gradually declining.

Table VI.—Mortality of Males per cent. of that of Females at Various Ages from 1841–45 onwards. (See Table 5.)

	All Ages Standard- ized.	0–	5–	10–	15–	20–	25–	35–	45–	55–	65–	75–	85 and up- wards
1841–45	109	117	102	92	88	105	95	101	114	111	111	109	106
1846–50	108	116	103	95	91	104	94	99	113	112	111	109	107
1851–55	110	116	104	98	90	103	97	102	118	114	112	110	106
1856–60	109	115	99	96	90	102	96	103	118	115	111	108	107
1861–65	111	115	102	98	93	105	100	109	122	118	112	109	110
1866–70	113	115	107	100	94	106	105	113	124	120	115	109	111
1871–75	115	117	108	100	97	109	109	119	128	121	114	111	110
1876–80	116	118	107	97	96	108	109	119	129	122	114	112	111
1881–85	115	118	102	97	96	102	104	117	127	122	116	113	112
1886–90	116	119	100	97	98	106	107	117	129	122	117	112	114
1891–95	116	119	98	96	100	108	108	118	128	121	115	111	110
1896–00	118	118	98	96	106	120	116	122	129	124	117	113	109
1901–05	119	119	97	95	107	119	118	121	130	128	119	115	110
1906–10	120	119	97	95	107	121	118	121	129	128	121	115	113
1911–15	122	120	100	95	111	122	124	126	132	133	124	118	115
1916–20	124	121	100	92	114	122	124	131	135	137	132	121	111
1921–25	122	124	104	100	100	113	114	130	132	133	127	119	110
1926–30	124	125	110	105	106	108	112	134	140	136	130	121	107
1931–35	124	126	110	100	109	114	106	126	142	139	132	123	113
1926 ..	123	124	109	100	104	107	112	133	135	134	129	123	111
1927 ..	123	125	109	107	104	110	112	135	137	134	129	120	108
1928 ..	125	126	109	113	108	103	112	130	138	136	130	123	110
1929 ..	122	122	113	100	108	110	111	139	143	134	126	117	103
1930 ..	127	128	110	104	109	112	111	133	144	139	133	121	103
1931 ..	126	128	115	100	108	114	103	129	140	135	132	121	111
1932 ..	125	125	116	108	114	114	110	123	135	137	134	123	110
1933 ..	124	126	110	107	113	114	109	124	141	137	129	122	110
1934 ..	125	124	104	100	109	115	107	124	142	142	132	124	111
1935 ..	127	126	111	100	105	112	107	125	146	143	134	126	112
1936 ..	127	128	117	118	105	112	111	126	142	147	133	127	112

At 35–45 male excess increased until 1926–30 but was smaller in 1931–36, and at 45–65 it reached maximal values in the last quinquennium, having increased from about 12 per cent. in 1846–50 to about 40 per cent. At ages over 65 the male excess has not greatly changed in the last 20 years.

The causes of death accounting for this large male excess may be gathered from Table 8, in which the mortality disadvantage to females arising from their greater average age is neutralized by reference of the rates for both sexes to a common population basis.

The causes chiefly accounting for male excess, with the contribution of each to its total of 2,282 per million, are seen to be respiratory diseases (443), heart disease (418), accident (282), digestive diseases

(192), tuberculosis (166), arterio-sclerosis (112), cancer (99) and suicide (76), which jointly contribute 78 per cent. of the total male excess. The principal causes common to both sexes shown in Table 8 for which female standardized mortality exceeds that of males, are, in order of numerical importance, mitral or unspecified valvular disease, rheumatoid and osteo-arthritis, diabetes, whooping-cough, non-malignant tumours, other diseases of the liver and gall bladder (not cirrhosis), gall stones, pernicious anæmia, disordered action of the heart, cerebral hæmorrhage, accidental burns, peritonitis and insanity (not general paralysis of the insane).

Infant Mortality.

Of the 495,764 deaths registered during the year, 35,425, or 7·1 per cent., were those of infants under one year of age.

The rate of infant mortality resulting from these deaths is 59 per 1,000 live births; this rate is 2 per 1,000 above that of the preceding year but equal to the previous low record reached in 1934.

The rates in the four quarters of the year were 81, 54, 44 and 56 respectively, being higher in the March quarter but lower in the other quarters than in 1935.

Compared with the mean rates of the preceding 5 years an improvement was recorded in each quarter.

Table VII traces the changes in the quarterly incidence of infantile mortality during the last 66 years, and shows, in conjunction with

Table VII.—Average Rate of Infantile Mortality by Quarters in Quinquennial periods, 1871–1935, and in each year 1931 to 1936.

	Yearly Average.	Quarterly Averages.			
		March.	June.	September.	December.
1871–75	153	151	133	180	149
1876–80	145	147	128	161	143
1881–85	139	140	125	152	139
1886–90	145	146	125	163	147
1891–95	151	151	132	169	151
1896–1900	156	142	124	212	148
1901–05	138	137	113	162	140
1906–10	117	124	98	120	128
1911–15	110	119	91	120	109
1916–20	90	116	83	75	91
1921–25	76	94	70	62	77
1926–30	68	91	60	52	69
1931–35	62	82	57	47	63
1931	66	94	59	46	67
1932	65	88	59	50	65
1933	64	84	53	49	69
1934	59	78	56	46	55
1935	57	68	56	45	60
1936	59	81	54	44	56

Table VIII, that until 1901-05, and again, but to a very slight degree, in 1911-15, while the coldest months of the year yielded the highest general death-rate, the hot summer months levied the highest toll on infant life.

During the present century, however, in all four quarters the infant death-rate has fallen in each successive quinquennium, but with great inequality. Comparing 1936 with 1896-1900, the fall ranges from 43 per cent. in the March quarter, 56 in the June, and 62 in the December, to 79 per cent. in the September quarter. The mortality in the third quarter has since 1916-20 yielded the lowest quarterly rate, while the March quarter has in each quinquennium yielded the highest.

The changes in the infant mortality rate from all causes and from diarrhoeal diseases since 1861-65 are shown in Table VIII. The diarrhoeal rate has declined from 31 per 1,000 live births in 1896-1900 to 5 in recent years. The hot summers of 1929, 1933, 1934 and 1935 produced no important increases in this rate.

Table VIII.—Infant Mortality, distinguishing Mortality from Diarrhoeal Diseases, 1861-1936.

Deaths under 1 year of age per 1,000 Live Births.

Year.	Diarrhoeal Diseases.	Other Causes.	All Causes.	Year.	Diarrhoeal Diseases.	Other Causes.	All Causes.
1861-65	15	136	151	1926	8	62	70
1866-70	20	137	157	1927	6	64	70
1871-75	19	134	153	1928	6	59	65
1876-80	16	129	145	1929	7	67	74
1881-85	14	125	139	1930	5	55	60
1886-90	17	128	145				
1891-95	20	131	151	1931	5	61	66
1896-1900	31	125	156	1932	6	59	65
1901-05	23	115	138	1933	6	58	64
1906-10	18	99	117	1934	5	54	59
1911-15	19	91	110	1935	5	52	57
1916-20	9	81	90				
1921-25	8	68	76	1936	5	54	59
1926-30	6	62	68				
1931-35	5	57	62				

Table IX shows that the fall during the six quinquennia for which detailed age distinction is available was continuous at every age period after the first week of life. On the first day of life the 1931-35 rate was slightly above that of the preceding quinquennium and at 1-7 days a further increase followed that recorded for 1926-30. For the first month of life the fall between 1906-10 and 1931-35 amounted to 22 per cent., whilst at 4-13 weeks it was 57 per cent. and at the later age groups 61 or 62 per cent.

At each age period under 2 weeks the 1936 rate was below that of 1935, and at every age period of the first year it was below the mean

rate for 1931–35, the amount of improvement on the latter basis at ages 0–1, 1–3, 3–6, 6–9 and 9–12 months being 4, 6, 2, 9 and 14 per cent. respectively. The neo-natal rate of 30·2 per 1,000 live births at 0–4 weeks was the lowest ever recorded. If these deaths are considered in conjunction with stillbirths, with which they are closely allied, the rates per 1,000 live or still births in each year since registration of stillbirths began have been as follows :—

Numbers and Rates per 1,000 Live and Stillbirths.

	Stillbirths.		Neo-natal deaths.		Combined rate.
	Number.	Rate.	Number.	Rate.	
1928	27,580	40·1	20,513	29·8	69·9
1929	26,847	40·0	21,136	31·5	71·5
1930	27,577	40·8	20,060	29·7	70·5
1931	26,933	40·9	19,966	30·3	71·2
1932	26,471	41·3	19,388	30·3	71·6
1933	25,084	41·4	18,688	30·9	72·3
1934	25,209	40·5	18,711	30·0	70·5
1935	25,435	40·7	18,192	29·1	69·8
1936	25,045	39·7	18,254	29·0	68·7

Distribution of Infant Mortality.—Table X shows how infant mortality was distributed in 1936 between the sexes and throughout the country.

For convenience in the interpretation of this and similar tables where the regional subdivision is employed, the counties comprising each region are given below.*

North I had the highest regional infant mortality rate (27 per cent. in excess of the national rate compared with 33 in 1935), followed by North IV and North III, whilst the South East outside Greater

* *Regional Summary.*—The country was re-divided into regions in 1931, after consultation with other Government Departments, with a view to securing greater homogeneity in the character of the sectional populations than was provided by the old grouping into North, Midlands, South (including London) and Wales.

The counties in the various regions are as follow :—

<i>South East.</i> Bedfordshire. Berkshire. Buckinghamshire. Essex. Hertfordshire. Kent. London. Middlesex. Oxfordshire. Southampton. Surrey. Sussex, East. " West. Wight, Isle of.	<i>North I.</i> Durham. Northumberland. <i>North II.</i> Cumberland. Westmorland. Yorkshire. East Riding. North Riding. <i>North III.</i> Yorkshire, West Riding. York C.B. <i>North IV.</i> Cheshire. Lancashire.	<i>Midland I.</i> Gloucestershire. Herefordshire. Shropshire. Staffordshire. Warwickshire. Worcestershire. <i>Midland II.</i> Derbyshire. Leicestershire. Northamptonshire. Nottinghamshire. Peterborough, Soke of.	<i>East.</i> Cambridgeshire. Ely, Isle of. Huntingdonshire. Lincolnshire— Parts of Holland. " Kesteven. " Lindsey. Norfolk. Rutlandshire. Suffolk, East. " West. <i>South West.</i> Cornwall. Devonshire. Dorsetshire. Somersetshire. Wiltshire.	<i>Wales I.</i> Brecknockshire. Carmarthenshire. Glamorganshire. Monmouthshire. <i>Wales II.</i> Anglesey. Caernarvonshire. Cardiganshire. Denbighshire. Flintshire. Merionethshire. Montgomeryshire. Pembrokeshire. Radnorshire.
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For the constitution of Greater London, see pp. 63–65 of the Preliminary Report on the Census of England and Wales, 1931.

Table IX.—Age Distribution of Infant Mortality, 1881–1936.

Rates per 1,000 (Live) Births.

Year.	Days.		Weeks.				Months.					Total under one year.
	0-1	1-7	0-1	1-2	2-3	3-4	Total under four weeks	Four weeks to 3 m'nths	3-6	6-9	9-12	
1881-1885 ..	—	—	—	—	—	—	67	28	44			139
1886-1890 ..	—	—	—	—	—	—	69	30	46			145
1891-1895 ..	—	—	—	—	—	—	74	31	46			151
1896-1900 ..	—	—	—	—	—	—	74	34	48			156
1901-1905 ..	—	—	—	—	—	—	70	28	40			138
1906-1910 ..	11.5	13.0	24.5	5.8	5.7	4.2	40.2	22.8	22.0	17.3	14.8	117.1
1911-1915 ..	11.4	12.7	24.1	5.7	5.3	3.9	39.0	20.2	19.6	15.9	14.1	108.7
1916-1920 ..	11.0	12.4	23.4	5.6	4.7	3.4	37.0	16.5	14.6	12.0	10.8	90.9
1921-1925 ..	10.4	11.3	21.7	5.0	3.9	2.8	33.4	12.8	11.3	9.2	8.3	74.9
1926-1930 ..	10.3	11.5	21.8	4.3	3.2	2.4	31.8	10.9	9.6	8.1	7.5	67.9
1931-1935 ..	10.7	11.7	22.4	3.9	2.9	2.2	31.4	9.9	8.5	6.6	5.7	62.2
1906 ..	11.8	13.2	25.0	6.1	6.2	4.6	41.9	25.7	27.0	20.7	17.2	132.5
1907 ..	11.3	13.1	24.4	6.0	5.9	4.5	40.7	23.3	21.3	17.3	15.1	117.6
1908 ..	11.5	12.8	24.3	5.9	5.8	4.3	40.3	24.2	23.6	17.7	14.6	120.4
1909 ..	11.6	13.2	24.7	5.7	5.3	4.0	39.8	20.4	19.2	15.6	13.8	108.7
1910 ..	11.5	12.5	24.1	5.4	5.1	3.8	38.5	20.0	18.8	15.0	13.2	105.4
1911 ..	11.6	12.7	24.3	6.0	6.0	4.5	40.6	24.7	25.9	20.6	17.4	129.2
1912 ..	11.3	12.9	24.2	5.6	5.0	3.7	38.4	17.7	14.9	12.5	11.4	94.7
1913 ..	11.8	12.7	24.5	5.8	5.4	3.9	39.5	20.3	19.8	15.7	13.6	108.9
1914 ..	11.4	12.7	24.1	5.5	5.0	3.9	38.5	19.3	18.7	15.0	13.0	104.4
1915 ..	10.9	12.5	23.4	5.7	5.0	3.7	37.7	18.6	18.2	16.0	15.2	105.8
1916 ..	10.9	12.3	23.2	5.6	4.9	3.4	36.9	16.9	15.2	11.7	10.3	91.1
1917 ..	11.0	12.4	23.4	5.6	4.8	3.4	37.1	16.9	15.0	11.6	10.6	91.1
1918 ..	11.1	12.1	23.2	5.5	4.6	3.4	36.6	17.1	16.1	14.4	13.7	97.9
1919 ..	12.2	13.7	25.9	6.1	4.9	3.6	40.4	16.4	14.4	11.8	10.3	93.2
1920 ..	10.4	11.5	21.9	5.3	4.6	3.3	35.0	15.5	13.0	11.0	10.0	84.5
1921 ..	10.8	11.6	22.4	5.4	4.5	3.0	35.2	14.7	13.7	9.7	7.8	81.2
1922 ..	10.4	11.6	22.0	5.2	4.1	2.8	33.9	12.4	10.6	9.2	8.6	74.7
1923 ..	10.2	10.9	21.1	4.6	3.6	2.6	31.9	11.4	10.0	8.3	7.6	69.2
1924 ..	10.6	11.2	21.8	4.8	3.8	2.6	33.0	12.4	10.8	9.3	8.8	74.2
1925 ..	10.1	11.1	21.2	4.7	3.7	2.7	32.3	12.5	11.2	9.4	9.0	74.5
1926 ..	10.0	11.3	21.3	4.6	3.6	2.5	31.9	11.6	10.4	8.6	7.7	70.2
1927 ..	10.6	11.6	22.2	4.3	3.4	2.5	32.3	10.7	9.7	8.7	8.2	69.7
1928 ..	10.4	11.2	21.6	4.1	3.0	2.4	31.1	10.7	9.2	7.4	6.8	65.1
1929 ..	10.4	11.9	22.3	4.6	3.3	2.6	32.8	11.6	10.7	9.9	9.4	74.4
1930 ..	10.4	11.6	22.0	3.8	2.9	2.2	30.9	9.6	7.8	6.1	5.5	60.0
1931 ..	10.4	11.7	22.1	4.0	3.1	2.4	31.6	10.9	9.3	7.8	6.8	66.4
1932 ..	10.6	11.8	22.4	3.8	3.0	2.4	31.6	10.8	9.1	7.2	6.3	65.0
1933 ..	11.1	11.8	22.9	4.0	3.1	2.2	32.2	9.9	8.8	6.8	6.0	63.7
1934 ..	10.9	11.7	22.6	3.9	2.8	2.0	31.3	8.8	7.5	5.8	5.1	58.6
1935 ..	10.8	11.3	22.0	3.7	2.7	2.0	30.4	9.1	7.7	5.4	4.3	56.9
1936 ..	10.7	11.2	21.9	3.5	2.7	2.0	30.2	9.3	8.3	6.0	4.9	58.5

Rates per 1,000 of those for 1906-10.

1906-1910 ..	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1911-1915 ..	991	977	984	983	930	929	970	886	891	919	953	928
1916-1920 ..	957	954	955	966	825	810	920	724	664	694	730	776
1921-1925 ..	904	869	886	862	684	667	831	561	514	532	561	640
1926-1930 ..	896	885	890	741	561	571	791	478	436	468	507	580
1931-1935 ..	930	900	914	672	509	524	781	434	386	382	385	531
1926 ..	870	869	869	793	632	595	794	509	473	497	520	599
1927 ..	922	892	906	741	596	595	803	469	441	503	554	595
1928 ..	904	862	882	707	526	571	774	469	418	428	459	556
1929 ..	904	915	910	793	579	619	816	509	486	572	635	635
1930 ..	904	892	898	655	509	524	769	421	355	353	372	512
1931 ..	904	900	902	690	544	571	786	478	423	451	459	567
1932 ..	922	908	914	655	526	571	786	474	414	416	426	555
1933 ..	965	908	935	690	544	524	801	434	400	393	405	544
1934 ..	948	900	922	672	491	476	779	386	341	335	345	500
1935 ..	939	869	898	638	474	476	756	399	350	312	291	486
1936 ..	930	862	894	603	474	476	751	408	377	347	331	500

London had the lowest (23 per cent. below the national rate compared with 27 in 1935). North I, II, IV and Wales registered improvements on the rates of the preceding year, whereas North III, the East and Southern regions showed increases ranging from 7 to 12 per cent.

The rates for the aggregates of different classes of area are highest for the county boroughs and lowest for London's outer ring, where infant mortality was lower than in the aggregate of all the rural districts outside Greater London, and was 17·0 per 1,000 live births less than in the Administrative County.

The handicap for the urban infant has diminished since 1911, as may be seen from a comparison between the infant mortality rates in recent years and the average rates during 1911–14 in Table XI. During the 25 years the excess of county borough over rural infant mortality has fallen from 39 to about 30 per cent. Comparison with Table III indicates that whereas in 1911–14 the urban handicap was greater at all ages combined than in the first year of life, the urban disadvantages in mortality have in recent years been rather more pronounced in infancy (30 per cent. excess compared with about 25 per cent. for all ages combined).

Table X.—Distribution of Infant Mortality, 1936.

	Deaths per 1,000 (Live) Births.			Mortality per cent. of that in England and Wales.		Deaths per 1,000 (Live) Births.			Mortality per cent. of that in England and Wales.
	Males.	Fe- males.	Both Sexes.	Both Sexes.		Males.	Fe- males.	Both Sexes.	Both Sexes.
England and Wales	66·2	50·4	58·5	100					
South East ..	58·4	45·0	51·9	89	East	56·1	42·0	49·2	84
Greater London	63·7	48·9	56·5	97	South West	56·1	38·7	47·6	81
Remainder of					Wales	69·1	54·0	61·8	106
South East ..	50·3	39·0	44·8	77	" I	69·3	54·2	62·0	106
North	75·9	57·6	67·0	115	" II	68·6	53·5	61·2	105
North I	81·6	66·1	74·1	127	County Boroughs* ..	75·2	56·7	66·2	113
" II	70·5	51·8	61·4	105	Other Urban Districts*	61·9	47·4	54·9	94
" III	74·7	55·0	65·1	111	Rural Districts* ..	59·7	45·7	52·9	90
" IV	75·6	56·8	66·5	114	Greater Admin. Co. ..	73·8	57·0	65·6	112
Midland	66·6	51·1	59·0	101	London { Outer Ring	54·9	42·0	48·6	83
Midland I ..	66·3	50·6	58·7	100					
" II	67·0	52·0	59·7	102					

* Excluding Greater London.

In Table VII of the Review for 1932 it was shown that when the county boroughs and county aggregates of urban and rural districts were grouped according to their mean densities per room, the infant mortality rates in 1930–32 increased regularly with the density. Thus whilst county boroughs with mean densities less than 0·7 persons per room had an average rate of 57·6 per 1,000 births, those with densities exceeding 1·15 per room had an average rate of 92·7. A similar progression was evident for the county aggregates, but for the Metropolitan boroughs the increase

was only noticeable for those with mean densities exceeding 1·3 persons per room. It must be remembered, however, that the mean density per room tends to increase from South to North, this being evident when the county boroughs are grouped according to the zones of latitude in which they are situated and according to the percentage of the populations in private families who were living more than two per room in 1931 (*see* Table VII of the Review for 1933).

Table XI.—Infant Mortality Rates in London and in Urban and Rural Aggregates and percentage excess in the County Boroughs compared with the Rural districts, 1911–14 and 1931–36.

	England and Wales.	London A.C.	County boroughs.*	Other urban districts.*	Rural districts.*	Per cent. excess in county boroughs over rural districts.
<i>Average, 1911–14</i>	110	108	125	107	90	+39
1931 ..	66	65	77	65	58	+33
1932 ..	65	67	75	63	58	+29
1933 ..	64	60	75	62	56	+34
1934 ..	59	67	66	55	53	+25
<i>Average, 1931–34</i>	64	65	73	61	56	+30
1935 ..	57	58	66	55	49	+35
1936 ..	59	66	66	55	53	+25

* Outside Greater London from 1931 onwards.

In Table XII the trend of infant mortality attributed to the group of congenital causes (premature birth, debility, malformations, etc., Nos. 157–161 of the International List), and to all other causes, since 1930–32, is compared for (a) the group of 14 county boroughs* having densities of 1·00 or more persons per room, at the census of 1931, (b) the group of 6 county aggregates of urban districts† having average densities of 0·85 or more persons per room, (c) the group of 15 county aggregates of rural districts‡ having average densities below 0·70 persons per room, (d) all the county boroughs with densities below 1 per room, (e) London, with a density per room of 0·98, and (f) England and Wales as a whole, with an average density of 0·83.

* Dewsbury, Dudley, Gateshead, Middlesbrough, Newcastle-on-Tyne, St. Helens, South Shields, Stoke-on-Trent, Sunderland, Tynemouth, West Ham, West Hartlepool, West Bromwich, Wigan.

† Durham, Northumberland, Staffordshire, Yorkshire West Riding, Glamorganshire, Monmouthshire.

‡ Buckinghamshire, Cambridgeshire, Cornwall, Devonshire, Huntingdonshire, Middlesex, Norfolk, Rutlandshire, Somersetshire, Surrey, Sussex East, Sussex West, Isle of Wight, Caernarvonshire, Cardiganshire.

No appreciable improvement has occurred in the rate from congenital causes in any of these groups of areas since 1930-32. The 1936 mortality rates from causes other than congenital show improvements of 16 and 18 per cent. respectively in the two groups of areas with least satisfactory housing indices, compared with 16 per cent. in the country as a whole and 17 and 18 per cent. respectively in the rural areas and county boroughs having lowest densities

**Table XII.—Infant Mortality from Congenital and Other Causes, in groups of areas of certain densities of persons per room in 1931:—
1930-32, 1933, 1934, 1935 and 1936.**

			Congenital Causes.						Other Causes.					
			County boroughs with 1 or more persons per room.	County aggregates of U.D.'s with .85 or more persons per room.	County aggregates of R.D.'s with less than .7 persons per room.	County boroughs with less than 1 per room.	London A.C. (.98 persons per room).	England and Wales.	County boroughs with 1 or more persons per room.	County aggregates of U.D.'s with .85 or more persons per room.	County aggregates of R.D.'s with less than .7 persons per room.	County boroughs with less than 1 per room.	London A.C. (.98 persons per room).	England and Wales.
			<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
Rates per 1,000 Live Births.														
1930-32	..	..	34.8	35.3	28.5	32.8	25.5	31.1	48.5	37.4	20.1	37.6	37.9	32.7
1933	..	..	38.6	37.5	29.7	35.0	27.1	33.1	47.2	37.7	17.9	36.6	32.4	30.6
1934	..	..	36.6	35.8	29.8	33.8	26.8	31.7	40.5	28.0	18.8	29.4	40.6	26.9
1935	..	..	36.3	35.0	27.9	33.3	25.7	31.1	43.6	30.7	14.7	29.1	32.2	25.8
1936	..	..	34.6	35.3	32.8	33.5	25.2	31.0	40.5	30.5	16.6	31.0	40.4	27.5
Rates per cent. of those in 1930-32.														
1933	..	..	111	106	104	107	106	106	97	101	89	97	85	94
1934	..	..	105	101	105	102	105	102	84	75	94	78	107	82
1935	..	..	104	99	98	102	101	100	90	82	73	77	85	79
1936	..	..	99	100	115	102	99	100	84	82	83	82	107	84

per room. The London rate from "other causes" is greatly influenced by the biennial periodicity of measles and the triennium 1930-32 included two measles years; in even years it rises 7 per cent. above and in odd years falls 15 per cent. below the 1930-32 rate. The high rate of 40.5 per 1,000 live births for group (*a*) is in part attributable to the fact that 11 of the 14 county boroughs are situated in the north, and in part to the social conditions of which the average number of persons per room is an index, and the excess of this rate over that for group (*d*) is indicative of the effect of these factors on infant mortality from causes other than congenital.

Table XIII shows that for all causes in the first year of life the decline in mortality from 1911-15 to 1926-30 amounted to 41 per cent. in London, 37 per cent. in county boroughs, 40 per cent. in the small towns and 34 per cent. in the rural districts. The 1936 rates showed a further improvement on 1926-30 rates amounting to 16 per

Table XIII.—Infant Mortality at Various Stages of Infancy in different Classes of Area compared with that in 1911–15 and 1926–30.

					Under 4 Weeks.				4 Weeks to 3 Months.				3-6 Months.			
Mortality (per 1,000 Live Births) compared with 1911-15 taken as 1,000.																
					London Admin. County.	County Boroughs.	Other Urban Districts.	Rural Districts.					London Admin. County.	County Boroughs.	Other Urban Districts.	Rural Districts.
1911-15 .. ..	..	..	..	..	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1916-20 .. ..	..	..	..	..	949	943	940	971	834	810	790	834	793	739	691	726
1921-25 .. ..	..	..	..	..	800	855	862	871	574	640	627	672	605	604	550	577
1926-30 .. ..	..	..	..	..	728	812	823	841	505	548	507	582	539	516	430	480
Mortality (per 1,000 Live Births) compared with 1926-30 taken as 1,000.																
					Greater London.	Outside Greater London.							Greater London.	Outside Greater London.		
					County Boroughs.	Other Urban Districts.	Rural Districts.					County Boroughs.	Other Urban Districts.	Rural Districts.		
1926-30 .. ..	..	..	..	..	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1931-35 .. ..	..	..	..	..	1,010	985	981	988	984	916	881	893	964	877	855	865
1931 .. ..	..	..	..	..	1,017	981	989	1,010	1,075	993	1,003	937	1,037	980	946	910
1932 .. ..	..	..	..	..	1,028	988	990	984	1,025	1,011	963	1,004	1,017	930	925	983
1933 .. ..	..	..	..	..	1,041	1,007	1,003	1,016	869	938	906	927	891	956	905	854
1934 .. ..	..	..	..	..	980	983	981	997	1,030	787	710	813	982	716	734	808
1935 .. ..	..	..	..	..	982	969	944	928	916	845	827	768	886	794	768	761
1936 .. ..	..	..	..	..	974	955	918	972	953	811	817	906	979	823	819	870
					6-9 Months.				9-12 Months.				Total under 1 Year.			
Mortality (per 1,000 Live Births) compared with 1911-15 taken as 1,000.																
					London Admin. County.	County Boroughs.	Other Urban Districts.	Rural Districts.					London Admin. County.	County Boroughs.	Other Urban Districts.	Rural Districts.
1911-15 .. ..	..	..	..	..	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1916-20 .. ..	..	..	..	..	735	729	685	739	738	732	701	736	833	818	800	851
1921-25 .. ..	..	..	..	..	578	604	568	583	592	643	573	602	655	700	683	721
1926-30 .. ..	..	..	..	..	546	517	463	506	529	550	478	535	592	626	598	659
Mortality (per 1,000 Live Births) compared with 1926-30 taken as 1,000.																
					Greater London.	Outside Greater London.							Greater London.	Outside Greater London.		
					County Boroughs.	Other Urban Districts.	Rural Districts.					County Boroughs.	Other Urban Districts.	Rural Districts.		
1926-30 .. ..	..	..	..	..	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1931-35 .. ..	..	..	..	..	828	834	764	822	762	761	735	796	945	911	899	925
1931 .. ..	..	..	..	..	902	992	917	973	817	936	925	908	991	978	971	974
1932 .. ..	..	..	..	..	915	897	824	925	937	791	795	910	1,000	947	938	974
1933 .. ..	..	..	..	..	759	884	821	829	691	832	789	829	910	951	932	948
1934 .. ..	..	..	..	..	878	702	615	719	855	644	591	715	960	833	825	893
1935 .. ..	..	..	..	..	678	686	640	634	506	595	575	591	859	841	830	824
1936 .. ..	..	..	..	..	960	730	614	646	792	611	593	674	948	841	821	890

cent. in the county boroughs, 18 in the small towns and 11 per cent. in the rural districts, Greater London being excluded in each case from the aggregates in this comparison.

Table IV on page 12 gives in column 9 the infant mortality rate in 1936 of each of 152 great towns, grouped according to their populations. These comprise the London Metropolitan Boroughs, all the County Boroughs and 41 other towns of more than 50,000 population in 1931. The aggregate rates per 1,000 births for the groups of towns, with additional separation of the northern and southern towns of each size, are given below :—

	Under 50 thousand population.	50 to 100 thousand population.	100 to 250 thousand population.	250 thousand or more population.
Greater London :				
Metropolitan boroughs	—	68	68	60
Outer ring towns ..	—	49	48	70†
County boroughs outside Greater London :				
All regions	54	63	64*	69
Northern region ..	51‡	69	73	73
South East, East or South West regions..	42§	52	52	50||
Other great towns outside Greater London :				
All regions	55	47	*	—
Northern region ..	62	51	—	—
South East, East or South West regions	44	42	—	—

* Rhondda U.D. is included with the county boroughs.

† West Ham only. ‡ Chester only. § Canterbury only. || Portsmouth only.

The influence of mere size of town on the infant rate is evidently not very great. County boroughs with 50 to 100 thousand population compare unfavourably with the other towns of similar population and in the same region, the disadvantage being greater than was noticed for standardized mortality at all ages (see page 17). The county boroughs are for the most part the industrial towns which grew up during the 19th century, and their density of population, whether measured per acre or per room, is considerably greater in most instances than in the other towns of over 50,000 inhabitants, many of which have been more recently evolved out of suburban or residential areas.

For each individual town column 10 of Table IV shows the difference between the infant mortality rate and that of the group in which the town is classed, and column 11 gives the standard errors of the rates for each town and each group. Where the difference amounts to twice its standard error the rate is designated as " high " or " low " in column 12 (see page 12). On this basis the metropolitan boroughs with high infant mortalities in 1936 were, in descending order, Stepney (99), Bethnal Green (98) and St. Pancras

(78) and those with low rates were Wandsworth (58), Lewisham (56), Greenwich (51), Deptford (50) and Stoke Newington (45). The outer ring towns with high rates were West Ham (70), Acton (67) and Enfield (63), whilst Croydon (41), Ilford (43), Walthamstow (42) and Beckenham (30) returned low rates. Newcastle-on-Tyne (89), Nottingham (89), Bradford (83), Manchester (77) and Liverpool (76) amongst the largest county boroughs, Gateshead (92), Salford (90), South Shields (87) and Preston (82) in the intermediate group and Warrington (90), Carlisle (86) and Wigan (82) amongst the county boroughs of under 100,000 population returned high rates. The lowest county borough infant mortalities were recorded by Northampton (38), Bournemouth (39), Bath (42), Hastings (42), Southend (45) and Oxford (45). Amongst the other towns Newcastle-under-Lyme (63) showed significant excess over towns of its class and Cambridge (33) and Luton (35) had the lowest rates in the table.

If it is desired to make comparisons with the national rate of 58·5 instead of with the group rates, any difference from this figure amounting to twice the standard error in column 11 may be regarded as statistically significant, but it must be remembered that the national rate comprises also the rural areas and small towns.

Distribution of the Fall in Mortality at Various Stages of Infancy.—The reduction of mortality at various stages of infancy in different classes of area is outlined for the period during which the necessary detail of tabulation is available in Table XIII.

In that table the comparison with 1911–15 is shown up to 1926–30 on the basis of the division previously used, that is to say, the aggregates referred to, other than the Administrative County of London, include in each instance some districts comprising London's outer ring, but from 1926–30 onwards the new density summary is used. It was pointed out in the Review for 1931 (p. 10) that the effect of the change on infant mortality rates is only of importance for the "other urban districts," the new aggregate having rates higher than the old, in 1931, by 5 per cent. for the first 4 weeks of life, 3 per cent. at 1–6 months, 8 per cent. at 6–9 months, 7 per cent. at 9–12 months and 5 per cent. for the first year as a whole. This effect, however, is eliminated in Table XIII by the change of datum line at 1926–30.

The percentage improvement in 1936 compared with 1926–30 rates is shown below to increase progressively for the aggregates outside Greater London throughout the first year of life. At ages under 9 months Greater London did not register much improvement, 1936 being an epidemic year for measles.

		Under 4 weeks.	4–13 weeks.	3–6 months.	6–9 months.	9–12 months.
Greater London ..	..	— 3	— 5	— 2	— 4	— 21
County Boroughs ..	..	— 5	— 19	— 18	— 27	— 39
Other Urban Districts ..	..	— 8	— 18	— 18	— 39	— 41
Rural Districts ..	..	— 3	— 9	— 13	— 35	— 33

The analysis of infant deaths by detail of age, initiated in 1905 with distinction of registration counties mainly urban and mainly rural in character, and expanded in 1917 and again in 1931, is given for each region and class of area in Table 13. Distinctions of sex and legitimacy are shown only for England and Wales as a whole, but are available for each of the populations dealt with. Some of the facts and rates applying to the illegitimate will be found in Table 14. The rates per 1,000 live births appear in Table XIV.

The chance of dying within half an hour of birth ranged from 1·2 per 1,000 in North II to 1·6 in Greater London and North IV. This measure is very dependent upon accuracy of certification, which in turn may be correlated with the frequency of the presence of a medical attendant at the birth. When the mortality within the first day as a whole is examined, Wales gives, as in each year since 1927, the highest rate of any of the large regions, the sequence being then as usual from North to South. For the combined mortality from the second to the seventh day Wales II shows the highest rate, whilst Greater London gives the lowest ratio. North I gives the highest rates from the 2nd week to 6 months of age, Greater London at 6–9 months and North IV at 9–12 months. The South-West, the South-East outside Greater London or the East have the lowest rates from the 4th week onwards.

Urban mortality excess is not, as a rule, present from birth, but tends to increase throughout the later months of infancy. This is shown in 1936 by the fact that the divergence between the county boroughs and rural districts increases from 7 per cent. of the rate for England and Wales at 0–4 weeks to 21 at 1–3 months, 45 at 3–6 months, and 59 per cent. at 6–9 months, then falling to 47 per cent. at 9–12 months.

Comparison of Table XIV with 1935 reveals increases in the rates in the South-East and South-West at ages 1–12 months and in the East at ages under 6 months.

Causes of Infant Mortality.—The causes of infant mortality are set forth in Tables 11–15, which compare the records of 1936 with those of previous years, and show the incidence of mortality from each cause upon infants distinguished by sex, age, legitimacy, class of area, and section of the country. From these tables have been prepared the analysis of mortality during the first half-hour of life in 1936 in Table XV and the comparisons in Table XVI between the mortality from the chief causes distinguished at various ages in 1936 and 1931–35, and from all causes in 1936 and 1935.

From Table XV it is found that the death rates in the first half hour from congenital malformations, debility, prematurity and injury at birth, 117, 58, 553 and 253 per million births, were below the average rates of 1931–35 (128, 70, 663 and 269 respectively), whilst atelectasis and homicide showed increases (195 and 35 compared with 175 and 28 in 1931–35). A further fall in mortality from

Table XIV.—Infant Mortality at Various Ages, 1936.

Rates per 1,000 Live Births.

Rates per 1,000 Live Births.																				
	Total under one Year.	Under 30 Minutes.	30 Minutes and under 1 Day.	Total under 1 Day.	Days.						1 Day and under 1 Week.	Weeks.			Total under 4 Weeks.	4 Weeks to 3Months.	Months.			
					1	2	3	4	5	6		0	1	2			3			
England and Wales.																				
All Infants ..	{ M. 66.2 F. 50.4 P. 58.5 }	1.5 1.5 1.5	10.4 7.8 9.2	11.9 9.3 10.7	3.8 2.8 3.3	3.6 2.3 3.0	2.5 1.7 2.1	1.4 1.1 1.3	0.9 0.8 0.9	0.7 0.7 0.7	12.9 9.5 11.2	24.8 18.8 21.9	3.8 3.2 3.5	3.2 2.2 2.7	2.3 1.7 2.0	34.1 26.0 30.2	10.8 7.6 9.3	9.4 7.1 8.3	6.6 5.3 6.0	5.3 4.4 4.9
Legitimate ..	{ M. 64.9 F. 49.2 P. 57.3 }	1.2 1.3 1.2	10.3 7.8 9.0	11.5 9.0 10.3	3.8 2.8 3.3	3.6 2.3 3.0	2.5 1.7 2.1	1.3 1.1 1.2	0.9 0.8 0.9	0.7 0.7 0.7	12.9 9.4 11.2	24.3 18.4 21.5	3.8 3.2 3.5	3.2 2.2 2.7	2.2 1.6 1.9	33.5 25.4 29.6	10.5 7.4 9.0	9.1 6.8 8.0	6.5 5.2 5.9	5.3 4.4 4.9
Illegitimate ..	{ M. 97.1 F. 78.6 P. 88.0 }	7.3 7.0 7.2	14.0 9.7 11.9	21.4 16.7 19.1	4.3 3.8 4.0	3.2 2.3 2.8	2.1 2.0 2.1	2.3 1.4 1.8	1.1 1.5 1.3	1.0 0.6 0.8	14.0 11.5 12.8	35.4 28.2 31.9	5.2 4.3 4.8	4.4 3.4 3.9	3.7 2.6 3.2	48.8 38.5 43.7	18.0 14.2 16.1	15.6 14.1 14.9	9.2 6.8 8.0	5.6 4.9 5.3
South-East..	1.5 1.6 1.4	7.9 7.7 8.3	9.5 9.3 9.7	2.8 2.9 2.8	2.4 2.4 2.2	1.6 1.6 1.7	1.0 0.8 1.3	0.6 0.6 0.6	0.5 0.5 0.6	9.0 8.8 9.2	18.4 18.1 18.9	2.8 2.7 2.9	2.1 2.1 2.0	1.6 1.7 1.4	24.8 24.5 25.3	8.5 9.2 7.3	8.0 9.5 5.6	6.0 7.6 3.5	4.6 5.5 3.1
Greater London																			
Remainder of South-East																			
North	1.5	9.9	11.5	3.7	3.5	2.4	1.4	1.0	0.8	12.8	24.3	4.3	3.4	2.3	34.3	10.3	9.6	6.9	5.9
North I	1.5	10.3	11.8	3.7	3.4	2.3	1.5	1.1	0.8	12.8	24.6	5.4	5.1	3.3	38.3	10.6	11.9	7.2	6.1
" II	1.2	8.6	9.9	2.8	3.2	2.4	1.1	0.9	0.9	11.3	21.2	4.1	2.7	2.3	30.3	10.3	9.2	5.9	5.6
" III	1.5	9.8	11.3	4.6	3.4	2.1	1.3	0.9	0.9	13.2	24.6	3.9	3.3	2.0	33.7	10.3	9.1	6.4	5.5
" IV	1.6	10.1	11.8	3.4	3.7	2.7	1.5	1.0	0.7	13.0	24.7	4.1	3.0	2.0	33.9	10.1	9.1	7.2	6.2
Midland	1.5	9.6	11.1	3.3	3.3	2.3	1.2	0.9	0.8	11.8	22.9	3.7	2.8	2.2	31.6	9.5	7.9	5.6	4.3
Midland I	1.5	9.9	11.4	3.2	2.9	2.2	1.2	1.0	0.8	11.3	22.8	3.8	2.6	2.0	31.2	9.3	7.8	5.9	4.5
" II	1.4	9.1	10.5	3.4	3.9	2.5	1.3	0.9	0.9	12.8	23.3	3.6	3.1	2.4	32.4	10.1	8.1	5.1	3.9
East	1.3	9.1	10.4	3.6	2.7	1.6	1.2	1.0	0.5	10.8	21.2	3.6	2.8	1.8	29.4	7.1	5.4	3.6	3.6
South-West	1.4	8.7	10.1	3.5	2.4	2.1	1.3	0.8	0.5	10.6	20.7	2.5	2.3	1.5	27.0	8.7	5.5	3.6	2.9
Wales	1.3	10.5	11.9	4.0	3.5	2.7	1.7	1.4	0.6	14.0	25.9	4.1	2.7	2.4	35.0	9.2	7.4	5.3	4.9
Wales I	1.3	10.5	11.9	3.7	3.6	2.6	1.6	1.5	0.6	13.6	25.5	4.1	2.5	2.6	34.8	9.1	7.7	5.7	4.7
" II	1.4	10.5	11.9	4.7	3.4	3.2	1.8	1.2	0.7	15.0	26.9	4.1	3.0	1.7	35.7	9.5	6.6	4.1	5.3
County Boroughs*	1.5	9.9	11.4	3.5	3.1	2.2	1.3	0.9	0.8	11.9	23.3	4.0	3.2	2.3	32.8	10.4	9.8	7.3	5.9
Other Urban Districts*	1.3	9.2	10.5	3.5	3.1	2.2	1.4	0.9	0.7	11.8	22.3	3.7	2.6	2.0	30.6	8.5	7.0	4.7	4.1
Rural Districts*	1.7	9.4	11.0	3.4	3.2	2.2	1.4	1.1	0.6	11.9	22.9	3.5	2.8	1.8	30.9	8.5	6.1	3.8	3.6

* Excluding Greater London.

violence and lack of care occurred amongst illegitimate infants. The mean rates in 1931-35 from this combination of causes were 72 per 100,000 live births for the legitimate and 6,315 for the illegitimate and in 1936 they were 59 and 5,383 respectively. Of the 134 deaths of illegitimate infants from these causes in 1936, 110, or 82 per cent., relate to abandoned infants of unknown parentage.

Table XV.—Mortality of the first 30 Minutes of Life, 1936.

International List Numbers.	Cause of Death.	All Infants.	Under 30 Minutes.						
			Legitimate.			Illegitimate.			
			Males.	Fe- males.	Both Sexes.	Males.	Fe- males.	Both Sexes.	
			Deaths.						
86	Convulsions	1	—	1	1	—	—	—	
157	Congenital malformations	71	23	46	69	1	1	2	
158	Congenital debility	35	7	27	34	—	1	1	
159	Premature birth	335	160	157	317	10	8	18	
160	Injury at birth.. .. .	153	89	55	144	2	7	9	
161 (a)	Atelectasis	118	61	54	115	—	3	3	
161 (b&c)	Other diseases peculiar to early infancy	6	3	1	4	1	1	2	
172-175	Homicide	21	2	1	3	6	12	18	
182	Accidental suffocation.. .. .	—	—	—	—	—	—	—	
194: 1	Lack of care	114	18	12	30	48	36	84	
	Other forms of violence	33	—	1	1	18	14	32	
	<i>Violence and lack of care</i>	168	20	14	34	72	62	134	
	Other Causes	15	4	1	5	7	3	10	
	All Causes	902	367	356	723	93	86	179	
			Mortality per Million Live Births.						
86	Convulsions	2	—	4	2	—	—	—	
157	Congenital malformations	117	77	163	119	79	82	80	
158	Congenital debility	58	23	96	59	—	82	40	
159	Premature birth	553	537	556	546	789	655	723	
160	Injury at birth.. .. .	253	299	195	248	158	573	362	
161 (a)	Atelectasis	195	205	191	198	—	245	121	
161 (b&c)	Other diseases peculiar to early infancy	10	10	4	7	79	82	80	
172-175	Homicide	35	7	4	5	473	982	723	
182	Accidental suffocation.. .. .	—	—	—	—	—	—	—	
194: 1	Lack of care	188	60	42	52	3,787	2,946	3,374	
	Other forms of violence	55	—	4	2	1,420	1,146	1,286	
	<i>Violence and lack of care</i>	278	67	50	59	5,680	5,074	5,383	
	Other causes	25	13	4	9	552	245	402	
	All Causes	1,490	1,232	1,260	1,246	7,337	7,038	7,190	
			Percentage of Total under 24 Hours.						
86	Convulsions	3	—	8	3	—	—	—	
157	Congenital malformations	16	10	22	16	17	8	11	
158	Congenital debility	14	5	25	14	—	13	8	
159	Premature birth	8	7	10	8	7	10	8	
160	Injury at birth.. .. .	26	27	23	26	17	70	41	
161 (a)	Atelectasis	19	19	19	19	—	25	15	
161 (b&c)	Other diseases peculiar to early infancy	12	11	6	9	50	50	50	
172-175	Homicide	81	67	100	75	75	86	82	
182	Accidental suffocation.. .. .	—	—	—	—	—	—	—	
194: 1	Lack of care	83	78	75	77	86	86	86	
	Other forms of violence	85	—	100	33	100	78	89	
	<i>Violence and lack of care</i>	80	65	64	64	88	84	86	
	Other causes	27	18	5	12	70	75	71	
	All Causes	14	11	14	12	34	42	38	

Table XVI shows that the percentage decline in infant mortality in 1936 compared with the average of the preceding 5 years was greatest for influenza, tuberculosis, convulsions, congenital debility and icterus and premature birth for which causes the decline was statistically significant.

The rates for syphilis, meningitis, convulsions, bronchitis, congenital debility, premature birth and inflammation of the stomach established new low records in 1936, whilst those for injury at birth and atelectasis were the highest recorded in Table 12. Deaths attributed to injury at birth per 1,000 live births have progressively increased since 1923.

Table XVI.—Comparison of Infant Mortality Rates (per 100,000 Live Births) in 1936 with those of immediately preceding years.

	Under 4 Weeks.	4 Weeks to 3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Under 1 Year.	Under 4 Weeks.	4 Weeks to 3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Under 1 Year.
	Increase or Decrease from Various Causes as compared with 1931-35.						Percentage Increase or Decrease as compared with 1931-35.					
Measles (7)	—	—	+ 4	+ 7	+ 2	+ 13	—	—	+57	+25	+ 4	+14
Whooping cough (9) ..	— 2	+ 6	—	— 4	+ 3	+ 3	—40	+17	—	— 9	+ 7	+ 2
Influenza (11)	— 3	— 7	— 9	— 9	— 7	— 33	—50	—58	—64	—60	—54	—55
Tuberculosis, all forms (23-32)	— 1	—	— 7	—10	— 7	— 24	*	—	—33	—36	—25	—29
Convulsions (86)	— 28	— 9	—	— 3	— 3	— 44	—27	—27	—	—16	—25	—23
Bronchitis and pneumonia (106-109)	— 12	—20	—12	—49	— 45	—138	—10	— 7	— 4	—18	—19	—11
Diarrhoea and enteritis (119)	+ 2	— 6	— 4	+ 7	—10	—10	+ 4	— 4	— 2	+ 7	—16	— 2
Developmental and wasting diseases (157-159, 161 a, b)	— 98	—25	—12	+ 1	— 2	—136	— 4	— 7	—12	+ 3	—11	— 5
Congenital defects (malformations and atelectasis) (157, 161a)	+ 36	+11	— 3	+ 2	—	+ 46	+ 7	+ 8	— 6	+ 9	—	+ 6
Congenital debility and icterus (158, 161b) ..	— 22	—14	—10	— 1	— 1	— 51	—10	—18	—26	—11	—25	—15
Premature birth (159) ..	—111	—21	+ 1	—	— 1	—132	— 7	—16	+ 8	—	*	— 7
Injury at birth (160) ..	+ 28	—	— 1	—	—	+ 27	+13	—	*	—	—	+12
Suffocation—in bed or not stated how (182 part) ..	— 4	—	+ 4	— 1	—	— 1	—25	—	+40	—33	—	— 2
Other causes.. .. .	— 8	— 7	+12	— 3	—15	— 20	— 4	— 6	+ 9	— 3	—15	— 3
All Causes	—125	—67	—25	—64	— 84	—364	— 4	— 7	— 3	—10	—15	— 6
	Increase or Decrease of Mortality in 1936 as compared with 1935.						Increase or Decrease of Mortality in 1936 per cent. of that in 1935.					
All Causes	—22	+14	+57	+55	+ 56	+159	— 1	+ 2	+ 7	+10	+13	+ 3

Note.—The percentages in this Table being based on rates per 100,000 live births may differ on this account from those derivable from the rates in Table VIII.

* Numbers too small to provide significant comparison.

Table XVII contrasts the mortality of male with that of female, and of legitimate with that of illegitimate, infants. The sex ratio of mortality was 131, a maximal ratio of 133 having been reached in 1930, followed by a decline in each year to 127 in 1934. This ratio ranged from 93 for whooping cough to 179 for syphilis. The percentage ratio of illegitimate to legitimate infant mortality was, as usual, highest for syphilis and diarrhoea.

Table XVII.—Infant Mortality by Cause, Sex and Legitimacy, 1936.

		Deaths per 1,000 Live Births.						Mortality per cent.				
		All Infants.		Legitimate Infants.		Illegitimate Infants.		Male of Female Infants.			Illegitimate of Legitimate Infants.	
		Male.	Fe-male.	Male.	Fe-male.	Male.	Fe-male.	All In-fants.	Legiti-mate.	Illegi-timate.	Male.	Fe-male.
All Causes.	Under four weeks ..	34.12	25.98	33.50	25.43	48.76	38.54	131	132	127	146	152
	4 weeks-3 months ..	10.78	7.65	10.47	7.36	17.99	14.24	141	142	126	172	193
	3-6 months ..	9.37	7.08	9.11	6.78	15.62	14.08	132	134	111	171	208
	6-9 " ..	6.60	5.31	6.49	5.25	9.15	6.79	124	124	135	141	129
	9-12 " ..	5.33	4.42	5.31	4.40	5.60	4.91	121	121	114	105	112
	Total under 1 year	66.20	50.44	64.88	49.22	97.12	78.56	131	132	124	150	160
All Ages under one Year.	Measles (7) ..	1.16	0.90	1.16	0.89	1.18	1.06	129	130	111	102	119
	Whooping cough (9)	1.71	1.84	1.72	1.81	1.50	2.45	93	95	61	87	135
	Tuberculosis, all forms (23-32) ..	0.59	0.60	0.59	0.60	0.55	0.57	98	98	96	93	95
	Syphilis (34) ..	0.34	0.19	0.28	0.16	1.89	0.74	179	175	255	675	463
	Convulsions (86) ..	1.82	1.14	1.79	1.13	2.60	1.39	160	158	187	145	123
	Bronchitis and pneumonia (106-109) ..	12.28	9.22	12.06	9.03	17.60	13.58	133	134	130	146	150
	Diarrhoea and enteritis (119) ..	6.10	4.50	5.83	4.29	12.39	9.25	136	136	134	213	216
	Developmental and wasting diseases (157-159, 161a & b)	31.16	24.07	30.80	23.70	39.68	32.73	129	130	121	129	138
	Congenital defects (malformations and atelectasis) (157, 161a) ..	8.94	7.22	9.00	7.21	7.34	7.52	124	125	98	82	104
	Congenital debility, sclerema and icterus (158, 161b)	3.52	2.29	3.45	2.21	4.97	4.26	154	156	117	144	193
	Premature birth (159)	18.72	14.56	18.35	14.28	27.38	20.95	129	129	131	149	147
	Other causes ..	11.04	7.98	10.65	7.61	19.73	16.79	138	140	118	185	221
	All causes ..	66.20	50.44	64.88	49.22	97.12	78.56	131	132	124	150	160

Table XVIII, which is derived from Table 15, furnishes an analysis by cause and region of the total mortality under one year of age in 1931-35 and 1936.

Apart from the usual large annual variations in regional mortality from measles and whooping cough, and fluctuations due to the small number of deaths from tuberculosis, syphilis and suffocation, this Table shows a regional distribution of the main causes of mortality similar to those of recent years. Greater London shows for 1936, as usual, a high diarrhoea rate and very low figures for convulsions and congenital debility; the North gives high syphilis and respiratory disease rates and both the North and Wales record, as usual, high rates for convulsions and congenital debility.

Comparison between the infant mortality rates in 1931-35 shows that the high mortality of North I infants compared with the rest of the North was due in the main to a considerable excess from bronchitis and pneumonia, convulsions, diarrhoea, enteritis and premature birth, with slighter excess also for each of the other causes except congenital malformations and injury at birth. The high infant mortality of Wales I compared with Wales II was chiefly due to bronchitis, pneumonia and premature birth, with slighter excess also for measles, whooping cough, diarrhoea, syphilis and congenital

Table XVIII.—Comparison of Infant Mortality from the Principal Causes in Geographical Regions—Rates per 100,000 Live Births in 1931–35 and 1936 and per cent. of those for England and Wales in 1936.

		Measles (7).	Whooping Cough (9).	Tuberculosis all forms (23–32).	Syphilis (34).	Convulsions (86).	Bronchitis and pneumonia (106–109).	Diarrhoea and enteritis (119).	Congenital malformations. (157)	Congenital debility (158).	Premature birth (159).	Injury at birth (160).	Other causes.	ALL CAUSES.
		Rates per 100,000 Live births.												
ENGLAND AND WALES	1931–35	90	174	83	40	193	1,218	542	585	291	1,801	226	974	6,217
	1936	103	177	59	27	149	1,079	532	608	241	1,669	253	956	5,853
Greater London	1931–35	81	172	73	40	58	1,088	790	520	202	1,444	215	945	5,628
	1936	157	180	59	23	32	1,102	935	524	151	1,304	235	946	5,648
Remainder of South-East	1931–35	32	124	74	24	91	709	281	509	245	1,441	211	822	4,563
	1936	53	104	39	10	77	696	265	563	190	1,378	212	893	4,480
North	1931–35	135	199	96	50	273	1,584	625	623	360	2,043	239	1,097	7,324
	1936	148	184	72	38	215	1,292	565	640	296	1,923	286	1,042	6,701
North I	1931–35	157	221	122	66	410	1,798	756	610	432	2,149	218	1,100	8,039
North II	1931–35	121	195	114	39	283	1,456	545	619	336	1,998	232	979	6,917
North III	1931–35	100	167	87	49	227	1,410	494	603	279	1,978	236	1,116	6,746
North IV	1931–35	149	209	85	47	235	1,618	660	641	380	2,044	251	1,111	7,430
Midland	1931–35	85	176	82	42	169	1,210	508	600	273	1,966	232	939	6,282
	1936	50	199	58	25	146	1,116	427	660	244	1,784	261	932	5,902
Midland I	1931–35	85	173	80	44	137	1,217	556	598	253	1,972	251	969	6,335
Midland II	1931–35	84	181	86	36	234	1,196	414	603	313	1,954	195	883	6,179
East	1931–35	33	146	98	42	152	815	216	570	288	1,687	180	882	5,109
	1936	49	150	52	11	142	842	224	553	247	1,657	228	763	4,918
South-West	1931–35	36	147	64	25	149	724	214	620	258	1,636	238	822	4,933
	1936	43	137	54	14	108	746	238	656	238	1,482	220	826	4,762
Wales	1931–35	83	180	70	30	500	1,334	430	670	358	2,052	232	976	6,915
	1936	29	272	47	40	369	976	361	659	332	1,915	232	949	6,181
Wales I	1931–35	94	182	66	32	499	1,425	443	685	361	2,101	217	987	7,092
Wales II	1931–35	50	175	81	26	504	1,058	391	625	349	1,905	280	937	6,381

Rates per cent. of those for England and Wales, 1936.

South-East	113	85	86	67	34	87	126	89	69	80	89	97	89
Greater London	152	102	100	85	21	102	176	86	63	78	93	99	96
Remainder	51	59	66	37	52	65	50	93	79	83	84	93	77
North	144	104	122	141	144	120	106	105	123	115	113	109	114
North I	135	88	127	196	238	134	179	100	146	123	104	101	127
North II	119	69	112	211	124	123	101	111	90	100	100	95	105
North III	121	106	129	130	117	124	96	98	110	114	102	109	111
North IV	166	118	117	107	126	111	84	111	128	116	126	115	114
Midland	49	112	98	93	98	103	80	109	101	107	103	97	101
Midland I	50	115	108	100	81	98	84	108	92	106	110	101	100
Midland II	46	106	80	70	134	114	73	110	120	109	90	89	102
East	48	85	88	41	95	78	42	91	102	99	90	80	84
South-West	42	77	92	52	72	69	45	108	99	89	87	86	81
Wales	28	154	80	148	248	90	68	108	138	115	92	99	106
Wales I	11	145	90	144	266	94	72	110	141	119	77	90	106
Wales II	79	178	51	152	198	82	55	105	131	103	132	123	105

malformations. Comparing the Northern rates with those of Greater London it is evident that the excess was distributed over all the causes distinguished except diarrhœa. On the other hand, the advantage of the rest of the South-East over Greater London was accounted for by lower mortality assigned to measles, whooping cough, bronchitis and pneumonia, syphilis, diarrhœa and enteritis, offset by an excess for convulsions and congenital debility with no important differences for the other causes. Comparison of the Eastern with the South-Eastern counties reveals an important excess from premature birth and slight excess from most other causes except measles, diarrhœa and injury at birth. The South-West also shows important excess over the South-East for premature birth and slighter excess for most other causes except tuberculosis and diarrhœa.

During the quinquennium 1931–35 1,458 deaths of infants under 1 year of age were classed to No. 161 c (3), *Other diseases of infancy*, and the details of these deaths are given below :—

				Males	Females
Ante-natal toxæmia	..	..	..	66	45
Melæna neonatorum	..	..	..	271	354
Hæmatemesis neonatorum	..	..	..	50	40
Hæmorrhage of newborn	..	..	..	233	230
Oedema neonatorum	..	..	..	17	16
Albuminuria	..	..	..	28	12
Cyanosis	..	..	..	10	4
Sclerema neonatorum	..	..	..	30	8
Anuria neonatorum	..	..	..	2	—
Sepsis neonatorum	..	..	..	30	12
Totals	..	..	..	737	721

Injury at birth.—Table XIX analyses the causes which were entered on death certificates during 1935 of infants of various ages up to one year whose deaths were classed to No. 160, Injury at birth. Of the 1,415 deaths, 121 were attributed to forceps delivery, 403 to cerebral or intracranial hæmorrhage, 64 to tears of the tentorium cerebri and 26 to other head injuries specified as such. Abnormal presentations were mentioned in 131, difficult or prolonged labour in 288, precipitate labour in 57 and malposition or compression of the umbilical cord in 25. Of the deaths with mention of malpresentations 67 were of male and 64 of female infants, this cause being exceptional in not showing a very pronounced male excess. The intracranial hæmorrhage and head injury groups consisted, on the other hand, of 309 males compared with 184 females.

Deaths classed to Congenital Malformations in 1931–35 and proportions confirmed by autopsy or operation in 1933.—In the classification of deaths for which more than one cause is stated, congenital

malformations are given a preference over most causes except the acute infectious diseases and syphilis, if the death occurs in the first three months of life, but at later ages any definite disease not presumably the consequence of a congenital defect is preferred (Rule 8 in the Manual of the International List of Causes of Death). That this rule does not overstate the mortality thought to be due to this group of diseases when deaths at all ages are combined is shown by the fact that in 1936 the 4,096 deaths would have been

Table XIX.—Deaths classed to Injury at Birth according to Certified Cause Sex and Age, 1935.

No.	Description of cause.	All ages		0-1 days		1-7 days		1-4 weeks		1-3 months		3-6 months		6-12 months	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
160a	With mention of Cæsarean section	11	4	5	4	4	—	2	—	—	—	—	—	—	—
160b	Without mention of Cæsarean section														
	Abnormal or malpresentation	7	10	6	5	1	3	—	2	—	—	—	—	—	—
	Breech presentation	40	48	21	27	16	18	2	2	1	1	—	—	—	—
	Brow presentation	3	—	1	—	1	—	1	—	—	—	—	—	—	—
	Face presentation	4	1	2	—	2	—	—	1	—	—	—	—	—	—
	Foot presentation	2	—	2	—	—	—	—	—	—	—	—	—	—	—
	Occipito-posterior presentation	10	5	6	4	4	1	—	—	—	—	—	—	—	—
	Shoulder presentation	1	—	1	—	—	—	—	—	—	—	—	—	—	—
	Excessive moulding of head	7	5	4	2	2	3	—	—	1	—	—	—	—	—
	Fracture of skull	1	—	1	—	—	—	—	—	—	—	—	—	—	—
	Separation of parietal and occipital bones	—	1	—	1	—	—	—	—	—	—	—	—	—	—
	Cerebral compression	6	3	3	1	2	1	1	—	—	—	—	1	—	—
	Cerebral hæmorrhage	151	107	34	25	86	60	27	20	2	2	1	—	1	—
	Intracranial hæmorrhage	97	48	23	14	58	26	13	7	3	1	—	—	—	—
	Tear of tentorium cerebri	46	18	18	12	22	3	6	3	—	—	—	—	—	—
	Cephalhæmatoma	1	2	—	—	1	1	—	1	—	—	—	—	—	—
	Erb's paralysis	1	—	—	—	1	—	—	—	—	—	—	—	—	—
	Spastic paralysis	—	1	—	—	—	1	—	—	—	—	—	—	—	—
	Hæmatoma of liver	1	—	—	—	1	—	—	—	—	—	—	—	—	—
	„ „ neck	—	1	—	1	—	—	—	—	—	—	—	—	—	—
	Disproportion	4	—	3	—	1	—	—	—	—	—	—	—	—	—
	Contracted pelvis	7	4	5	1	—	3	2	—	—	—	—	—	—	—
	Difficult birth or labour	129	73	54	39	52	28	21	5	2	1	—	—	—	—
	Prolonged labour	59	27	26	9	28	17	4	1	1	—	—	—	—	—
	Forceps delivery	80	41	23	15	35	21	18	4	4	1	—	—	—	—
	Compression or pressure during birth	13	8	7	1	5	5	1	2	—	—	—	—	—	—
	Stress at birth	3	1	2	1	1	—	—	—	—	—	—	—	—	—
	Suffocation during birth	9	4	7	2	2	1	—	1	—	—	—	—	—	—
	Rupture of blood vessels	2	5	—	2	2	3	—	—	—	—	—	—	—	—
	Compression of umbilical cord	5	4	3	3	1	1	1	—	—	—	—	—	—	—
	Prolapse of umbilical cord	2	3	2	2	—	1	—	—	—	—	—	—	—	—
	Strangulation by umbilical cord	7	4	5	3	2	1	—	—	—	—	—	—	—	—
	Antepartum hæmorrhage	3	2	3	2	—	—	—	—	—	—	—	—	—	—
	Placenta prævia	7	2	4	2	3	—	—	—	—	—	—	—	—	—
	Premature separation of placenta	1	2	1	2	—	—	—	—	—	—	—	—	—	—
	Hydramnios	2	—	2	—	—	—	—	—	—	—	—	—	—	—
	Inspiration of vaginal mucus	6	13	3	8	1	5	2	—	—	—	—	—	—	—
	Post maturity	5	1	1	—	4	—	—	1	—	—	—	—	—	—
	Immersion at birth	3	5	3	5	—	—	—	—	—	—	—	—	—	—
	Precipitate labour	32	25	17	14	13	10	2	1	—	—	—	—	—	—
	Birth injury (unspecified)	117	52	37	11	53	22	20	12	6	5	1	2	—	—
160	Total	885	530	335	218	404	235	123	63	20	11	2	3	1	—

increased by 82 or 2 per cent. if classification had been in accordance with the order of preference indicated on the certificate by the physician rather than by use of the rules.

Table XX indicates to what extent the certification of congenital malformations is based upon post-mortem evidence or upon evidence obtained during surgical operations. The 3,877 deaths classed to No. 157 during 1933 have been grouped into :—(A) Malformations which would in almost all cases be recognisable without operation or the need of a post-mortem examination; (B) Congenital malformation of the heart; (C) Malformations of other deep-seated organs whose accurate diagnosis would in most instances depend upon evidence obtained by operation or autopsy; (D) Malformations of unstated nature or described only by the symptoms believed to originate from them. In group A there were 1,790 deaths and although in connection with only 13 per cent. of these was there a post-mortem examination or operation the diagnosis of a congenital malformation may be assumed to have been correct for all deaths of this group. Group B consisted of 1,378 deaths classed to congenital malformations of the heart and in 19 per cent. of these there was confirmation, presumably by autopsy. The diagnosis would not be in doubt in any considerable proportion of the remainder of this group. Group C comprised 317 deaths classed to congenital pyloric stenosis, with confirmation of the diagnosis in 44 per cent. (112 out of 247 deaths of males and 26 out of 70 of females), and 317 deaths attributed to malformations of other internal organs with confirmation in 54 per cent. In connection with 65 deaths attributed to atresia of the bile ducts or other malformations of the biliary passages there was confirmation of diagnosis in 38 per cent. and for 43 deaths attributed to malformations of the urinary system (excluding cystic disease of the kidneys) there was confirmation in 77 per cent. In a total of 634 deaths of this group there was no confirmation of diagnosis for 324, and in the ill defined group D there was no confirmation with regard to 70.

If it be assumed that 10 per cent. of the deaths attributed to congenital malformations of the heart were of doubtful diagnosis, a total of 532 deaths out of 3,877, or about 14 per cent. of all deaths classed to congenital malformations, must be regarded as doubtful and perhaps due to causes which were not congenital. It is, therefore, unlikely that the deaths so assigned are overstated by as much as this and a corresponding failure to recognise congenital malformations of deep-seated organs, with consequent classification of deaths to other causes, probably compensates for such a tendency.

In the last columns of Table XX the total deaths during 1931–35 have been classified into the same groups with separation of males

Table XX.—Deaths classed to various Congenital Malformations in 1933 and 1931–35, with Number and Proportion of the 1933 deaths for which the diagnosis was based upon an autopsy or operation.

Sub- title of No. 157	Nature of malformation or organs malformed.	Deaths in 1933 at ages:—			No. of these confirmed by autopsy, or operation at ages:—			Per cent. con- firm- ed. All ages.	Total deaths in 1931–35.				
		0–	1–	15 up	0–	1–	15 up		Under 15		15 upwards		
									M.	F.	M.	F.	
a b d e2 e3 e4(pt)	(A) <i>Malformations recognis- able without autopsy, etc.:—</i>												
	Congen. hydrocephalus..	186	71	9	35	3	4	16	728	571	39	32	
	Spina bifida and menin- gocele	988	29	2	67	6	—	7	2,114	3,027	13	15	
	Monstrosities	93	—	—	3	—	—	3	177	263	—	—	
	Cleft palate, hare lip ..	111	15	—	26	12	—	30	378	229	2	—	
	Imperforate anus	62	2	—	23	2	—	39	252	82	—	—	
	Other stated malforma- tions	186	31	5	37	13	1	23	552	499	26	153	
	<i>Skeletal system gene- rally</i>	9	2	2	—	—	—	0	19	14	3	2	
	Cranium, scalp	51	13	1	4	2	—	9	131	177	4	1	
	Face, eye, ear	7	—	—	3	—	—	43	21	13	1	—	
	Mouth, throat	8	—	—	2	—	—	25	31	22	—	—	
	Neck, thyroid	8	—	—	1	—	—	12	25	13	—	—	
	Larynx, trachea	6	1	—	1	—	—	14	27	30	—	—	
	Thorax	3	—	—	—	—	—	0	8	10	1	3	
	Limbs	12	5	—	—	4	—	24	22	34	1	4	
	Spinal column	5	—	2	2	—	1	43	5	13	1	2	
	Abdominal wall, um- bilicus	48	7	—	16	6	—	40	158	113	8	4	
	Pelvis	3	—	—	—	—	—	0	1	4	—	—	
	Rectum, anus	5	1	—	2	—	—	33	17	13	—	—	
	External genital organs	15	2	—	6	1	—	41	67	8	6	4	
	Nævi	6	—	—	—	—	—	0	20	35	1	5	
		Total of Group A	1,626	148	16	191	36	5	13	4,201	4,671	80	72
c e1 e4(pt)	(B) <i>Congenital malformation of heart</i>	1,136	160	82	223	22	13	19	3,976	2,777	223	200	
	(C) <i>Malformations of other deep seated organs:—</i>												
	Congen. pyloric stenosis	316	1	—	137	1	—	44	1,450	374	—	—	
	Other stated malforma- tions	268	19	30	141	11	20	54	822	520	76	36	
	<i>Cranial cavity, meninges</i>	2	1	—	1	1	—	67	2	4	—	—	
	Brain, spinal cord ..	9	1	3	5	—	3	62	32	40	4	2	
	Lungs, bronchi, medi- astinum	4	—	—	3	—	—	75	8	9	—	—	
	Aorta, blood vessels..	—	2	2	—	2	2	100	11	8	18	4	
	Diaphragm	6	1	—	5	1	—	86	15	9	1	—	
	Transposition of viscera	1	—	—	1	—	—	100	—	1	—	—	
	“Abdominal viscera”	3	—	—	3	—	—	100	7	—	2	—	
	Œsophagus	29	1	2	16	1	1	56	79	58	2	1	
	Stomach	4	—	1	—	—	1	20	14	4	2	1	
	Intestine, “alimentary tract,” peritoneum	100	9	14	52	2	6	49	319	217	27	18	
	Liver	8	1	—	3	1	—	44	17	17	—	1	
	Bile ducts, gall bladder	64	—	1	24	—	1	38	110	69	4	—	
	Kidney, ureter	21	—	6	13	—	6	70	166	71	12	7	
	Bladder, urethra ..	13	3	—	11	3	—	87	36	4	4	—	
	Other organs	4	—	1	4	—	—	80	6	9	—	2	
		Total of Group C	584	20	30	278	12	20	49	2,272	894	76	36
	e5 e4(pt)	(D) <i>Nature of malformation not stated, or symptoms given only:—</i>											
		Congenital malformation (unspecified)	63	2	—	3	—	—	5	240	173	—	—
Other ill-defined defects..		8	2	—	1	1	—	20	17	7	—	2	
	Total of Group D	71	4	—	4	1	—	7	257	180	—	2	

and females. The sex ratio varies widely for different malformations, as shown by the following percentage ratios of male to female deaths :—

Nature or site of Congenital Malformation.	No. of deaths 1931-35.		Per cent. ratio of Male to Female Deaths.
	Male.	Female.	
Pyloric stenosis	1,450	374	388
Imperforate anus	252	82	307
Cleft palate, hare lip	380	229	166
Bile ducts, gall bladder	114	69	165
Face, mouth, throat, neck, thyroid	78	48	162
Œsophagus, stomach	97	64	152
Intestine, peritoneum	346	235	147
Abdominal wall, umbilicus	166	117	142
Heart	4,199	2,977	141
Hydrocephalus	767	603	127
Brain, spinal cord, meninges, etc.	38	46	83
Cranium, scalp	135	178	76
Skeletal system—Spine (except spina bifida), thorax, pelvis, limbs	61	86	71
Spina bifida, meningocele	2,127	3,042	70
Monstrosities	177	263	67
Nævi	21	40	53

Deaths from congenital malformations of the skeletal system tend to occur in about three males to every four females. On the other hand deaths from hydrocephalus occur in about five males to four females, of the heart and abdominal wall in about seven to five, of the œsophagus, stomach (except pyloric stenosis) and intestine in about three to two, of the face, mouth, throat and biliary passages in about eight to five, whilst for imperforate anus as a cause of death the ratio is three males to one female and for congenital pyloric stenosis it is about four males to one female.

Mortality of Legitimate Infants and Children under 2 years of age according to Social Class of Father.

Table XXI summarizes for the more important causes of death some of the information contained in Tables 14 and 17 of the Decennial Supplement for 1931, Part IIa (Occupational mortality). The death rates tabulated are of legitimate infants under 1 year and of legitimate children aged 1-2 years whose fathers' occupation was classified as I.—Professional, etc.; II.—Intermediate; III.—Skilled; IV.—Intermediate; V.—Unskilled. In the right hand portion of the table the rates are expressed as percentages of the mortality of all infants or children of the age in question from the specified cause.

The effects of social class on mortality appear to increase with advancing age from 0-4 weeks when the Class V rate was $1\frac{1}{2}$ times that of Class I, to 6-9 months at which age the Class V rate was 5.4 times that of Class I, but at subsequent ages up to 2 years no appreciable change in the social class range occurs, the ratio of Class V to Class I mortality being 5.4 at 9-12 months and 5.1 at 1-2 years. This maximum of sensitiveness of mortality to social factors at about the end of the first year of life has been seen also when comparing the death rates of towns with high and low rates of overcrowding, and when comparing urban and rural mortality.

Table XXI.—Mortality of Legitimate Infants, and Children Aged 1-2 years, according to Social Class of Father, 1930-32.

	Rates per 10,000 legitimate live births for deaths under 1 year, or per 100,000 legitimate children living at ages 1-2 years.						Mortality of children of specified class per cent. of that of all legitimate children.				
	All	I	II	III	IV	V	I	II	III	IV	V
ALL CAUSES—Under 1 year ..	616	327	450	576	668	771	53	73	94	108	125
Under 4 weeks ..	302	217	272	294	319	325	72	90	97	106	108
1-3 months ..	100	43	65	93	108	131	43	65	93	108	131
3-6 „ ..	84	31	47	75	94	120	37	56	89	112	143
6-9 „ ..	69	19	36	60	78	102	28	52	87	113	148
9-12 „ ..	61	17	30	53	69	92	28	49	87	113	151
1-2 years ..	1,452	454	728	1,253	1,573	2,298	31	50	87	108	158
Premature birth .. 0-1 yr.	173	105	144	168	186	196	61	83	97	108	113
Injury at birth .. „	21	23	25	21	20	20	110	119	100	95	95
Congenital malformations .. „	55	50	54	56	57	54	91	98	102	104	98
Congenital debility .. „	30	14	22	29	33	38	47	73	97	110	127
Infantile convulsions .. „	21	13	17	20	26	23	62	81	95	124	110
Whooping cough .. „	18	3	10	16	21	27	17	56	89	117	150
Tuberculosis, all forms .. „	10	3	6	9	11	13	30	60	90	110	130
Bronchitis and pneumonia .. „	127	28	61	112	145	188	22	48	88	114	148
Diarrhœa and enteritis .. „	52	20	26	46	54	79	38	50	88	104	152
Accident .. „	8	6	8	7	9	10	75	100	88	113	125
Measles .. 1-2 yrs.	242	25	70	194	246	469	10	29	80	102	194
Whooping cough .. „	127	28	52	109	140	209	22	41	86	110	165
Diphtheria .. „	36	13	18	32	38	55	36	50	89	106	153
Tuberculosis, all forms .. „	113	69	73	104	125	150	61	65	92	111	133
Influenza .. „	28	16	23	26	24	39	57	82	93	86	139
Bronchitis and pneumonia .. „	529	128	223	448	607	861	24	42	85	115	163
Diarrhœa and enteritis .. „	72	28	40	60	76	118	39	56	83	106	164
Accident .. „	53	19	39	48	56	70	36	74	91	106	132
Other causes .. „	252	128	190	237	261	327	51	75	94	104	130

NOTE.—*Italic* figures are based upon less than 20 deaths.

Amongst the principal causes of death at ages under 1 year mortality attributed to premature birth increases considerably from 10.5 per 1,000 in Class I to 19.6 in Class V, and a similar gradient is present for congenital debility, infantile convulsions, the infective diseases and accident. Bronchitis and pneumonia exhibit the steepest gradient at this age, Class V having a mortality 6.7 times that of Class I both at this age and at 1-2 years. Congenital malformations show little variation with social class, and deaths from injury at birth are most frequent in Classes I and II.

In the second year of life measles has the steepest class gradient, Class V having a mortality 19 times that of Class I. For whooping

cough the corresponding ratio is 7·5, for bronchitis and pneumonia 6·7, for diarrhoea and enteritis and diphtheria 4·2, for accident 3·7, for influenza 2·4 and for tuberculosis 2·2.

Mortality at Ages over One Year.

Table XXII states the crude and standardized death-rates at all ages for sexes and persons for the whole country, as well as the mortality per million living at different ages, for 1935 and 1936, and in order to provide means of comparison with experience of some ten years back, for 1921–30.

The mortality of each sex at ages under 5 and at 45 and over was higher than in 1935, and for males at 20–25 there was no appreciable change but at all other ages distinguished in Table XXII it was lower. At every age-group for each sex mortality was lower than in 1921–30 except for males at ages 75 and over.

Table XXII.—Mortality from all Causes per Million Population, 1921–30, 1935 and 1936.

	Males.			Females.			Persons.		
	1921–30.	1935.	1936.	1921–30.	1935.	1936.	1921–30.	1935.	1936.
All Ages.									
Crude	12,927	12,485	12,930	11,401	11,064	11,410	12,131	11,746	12,139
Standardized { A ..	11,826	10,167	10,434	9,602	8,036	8,152	10,644	9,026	9,213
{ B ..	12,774	11,034	11,309	10,953	9,271	9,405	11,827	10,106	10,310
0–	25,345	17,894	19,068	20,386	14,227	14,913	22,896	16,088	17,025
5–	2,513	2,128	2,104	2,327	1,935	1,848	2,420	2,032	1,977
10–	1,658	1,342	1,276	1,637	1,289	1,128	1,648	1,316	1,203
15–	2,602	2,133	2,046	2,483	1,993	1,853	2,543	2,064	1,950
20–	3,335	2,899	2,901	3,030	2,596	2,551	3,178	2,745	2,723
25–	3,890	3,131	2,974	3,458	2,893	2,729	3,656	3,009	2,848
35–	6,379	4,984	4,860	4,830	4,008	3,906	5,544	4,459	4,349
45–	11,615	10,766	10,845	8,554	7,443	7,552	10,006	8,972	9,065
55–	24,363	23,226	24,149	18,124	16,247	16,384	21,086	19,505	19,998
65–	59,152	55,466	56,586	46,014	41,542	42,672	51,907	47,797	48,927
75–	136,934	131,750	137,285	114,049	104,903	108,068	123,108	115,560	119,619
85 and upwards	283,060	269,166	291,422	261,506	239,291	259,530	268,676	248,985	269,871

A. English Standard (Population of England and Wales, 1901).
(See page 2.)

B. International Standard.

The extent of the fall at the various ages can be better appreciated from Table XXIII; in which the mortality in 1934, 1935 and 1936 is expressed as a percentage of the rate in the decennium 1921–30. At “all ages” the standardized rates according to the English standard have declined since 1921–30 by 12 per cent. for males and 15 per cent. for females. The fall is greater at 0–5 than at any higher age for males but for females it is greatest at 10–15.

At each age period under 25 and over 45 the proportionate decline in mortality since 1921–30 has been greater for females than males, but between 25 and 45 the reverse is true. At ages between 15 and 35 there has been a rapid improvement since 1933 for each sex following a period of little change.

The mortality of males at ages over 75 shows little tendency to fall, but females at these ages register a slight improvement compared with 1921–30.

Table XXIII.—Mortality at various ages from all causes in 1934, 1935 and 1936 per cent. of that for the same sex and age in 1921–30.

—	Males.			Females.			Persons.		
	Per cent. of 1921–30.			Per cent. of 1921–30.			Per cent. of 1921–30.		
	1934.	1935.	1936.	1934.	1935.	1936.	1934.	1935.	1936.
All Ages—									
Crude	96·8	96·6	100·0	97·5	97·0	100·0	97·1	96·8	100·0
Standardized { A	88·2	86·0	88·2	86·7	83·7	84·9	87·4	84·8	86·6
B	89·0	86·4	88·5	87·6	84·6	85·9	88·3	85·4	87·2
0—	76	71	75	77	70	73	76	70	74
5—	99	85	84	102	83	79	100	84	82
10—	87	81	77	85	79	69	86	80	73
15—	91	82	79	88	80	75	90	81	77
20—	92	87	87	88	86	84	90	86	86
25—	83	80	76	88	84	79	85	82	78
35—	80	78	76	85	83	81	82	80	78
45—	94	93	93	90	87	88	92	90	91
55—	96	95	99	91	90	90	93	93	95
65—	94	94	96	91	90	93	93	92	94
75—	94	96	100	91	92	95	93	94	97
85 and upwards	91	95	103	88	92	99	89	93	100

A. English Standard (Population of England and Wales 1901).

B. International Standard. (See page 2.)

Table XXIV measures the effect of changes in the birth rate upon the mortality rate at 0–5 years in 1911–14 and from 1917 onwards, by comparison with the trend of rates which have been standardized by reference to the 1901 Census population at individual years of age up to 5. It shows that in all these years the fall of the birth-rate has caused some under-statement of crude mortality at 0–5 for each sex, except during the three years 1920–22, when the temporary rise in the birth rate after the war reversed the process.

Both the crude and standardized rates at these ages in 1936 were the lowest recorded with the exception of those in 1935.

Mortality at 1–5.—Table XXV shows that mortality has fallen since 1911–20 more rapidly for the years immediately following infancy than for the first year of life itself. The standardized rate at ages 1–5 in 1936 was 59 per cent. of that in 1921–30, 79 per cent. of the mean rate in 1931–33 and 107 per cent. that in 1935. Compared with 1921–30 the decline has been least in the first year and greatest in the second, then decreasing continuously to the

fifth year of life. The second year of life usually manifests the greatest degree of annual variation and would seem to be the age of greatest susceptibility to disturbing factors. That the death-rates

Table XXIV.—Comparison of Crude and Standardized Death-Rates per 1,000 living at Age 0-5, 1911-14 and 1917-36.

	Males.		Females.		Persons.	
	Crude.	Stand-ardized.	Crude.	Stand-ardized.	Crude.	Stand-ardized.
1911-14 ..	40.6	40.8	33.9	34.2	37.3	37.5
1917	31.8	34.3	26.3	28.4	29.1	31.4
1918	38.9	43.1	34.1	37.5	36.5	40.3
1919	32.8	36.6	26.4	29.5	29.6	33.1
1920	36.2	31.8	28.9	26.0	32.5	29.0
1921	32.3	29.2	25.8	23.6	29.1	26.4
1922	30.2	28.5	24.5	23.1	27.4	25.8
1923	24.3	25.0	19.6	20.1	22.0	22.5
1924	25.1	27.3	20.2	21.8	22.6	24.6
1925	25.3	27.1	20.7	22.1	23.0	24.6
1926	23.3	24.9	18.8	20.0	21.1	22.4
1927	23.7	25.2	18.9	20.0	21.3	22.6
1928	21.9	23.3	17.4	18.5	19.7	20.9
1929	26.3	27.7	21.6	22.7	24.0	25.2
1930	20.5	21.4	16.0	16.7	18.3	19.1
1931	22.4	23.1	17.4	18.0	19.9	20.6
1932	21.0	22.0	16.8	17.6	19.0	19.8
1933	19.9	21.2	15.8	16.9	17.9	19.1
1934	19.3	20.7	15.6	16.7	17.5	18.7
1935	17.9	18.8	14.2	15.0	16.1	16.9
1936	19.1	19.7	14.9	15.4	17.0	17.5

Table XXV.—Mortality per 1,000 living (both sexes), in each of the first Five Years of Life, 1911-14, 1921-30, 1931-33, 1934, 1935 and 1936.

Year of Life.			1911-14.	1921-30.	1931-33.	1934.	1935.	1936.	1936. per cent. of 1921-30.
0-1			118.16	75.51	66.91	63.12	60.16	61.80	81.8
1-2			34.06	19.88	14.27	12.75	9.59	10.72	53.9
2-3			13.68	8.51	6.19	5.92	4.63	4.98	58.5
3-4			8.32	5.23	4.21	4.47	3.38	3.37	64.4
4-5			6.14	3.90	3.40	3.56	2.97	3.00	76.9
0-5 {	Crude ..		37.27	22.90	18.93	17.50	16.09	17.03	74.4
	Standard ..		37.52	23.52	19.83	18.74	16.90	17.55	74.6
1-5 {	Crude ..		15.62	9.47	7.01	6.59	5.08	5.50	58.1
	Standard ..		15.54	9.37	7.01	6.67	5.14	5.51	58.8

of children aged 1-5 are more sensitive than those of infants or older children to environmental factors such as are indicated by urbanization or density of persons per room was shown in the Review for 1932 (Table XXVIII).

Compared with the preceding year an increase of 12 per cent. was registered in the second year of life, an increase of 8 per cent. in the third and no appreciable change in the fourth or fifth.

The distribution throughout the country of mortality at 1-2 and 2-5 is shown in Table XXVI, which may be compared with Table XIV (Infant Mortality). The greatest excess over the general average recorded in the table at ages 1-2 is for North IV, which shows a rate more than twice the corresponding rate for the South-East excluding Greater London. Next in order come the other Northern regions. At 2-5 North I again shows the highest rate, followed by the other North regions, whilst the Southern regions (excluding Greater London) and the East occupy the lowest places in the order of mortality at both ages.

Table XXVI.—Mortality in Early Childhood: distribution at ages 1-2 and 2-5 in 1931-35 and 1936.

—	Deaths per 1,000 Living (both sexes).				Mortality in 1936 per cent. of 1931-35.		Mortality in 1936 per cent. of that in England and Wales.	
	1-2 years.		2-5 years.					
	1931-35.	1936.	1931-35.	1936.	1-2.	2-5.	1-2.	2-5.
England and Wales	13·11	10·72	4·42	3·77	82	85	100	100
South-East	10·02	9·74	3·56	3·23	97	91	91	86
Greater London	11·38	11·50	3·93	3·66	101	93	107	97
Remainder of South-East..	7·90	7·05	2·98	2·57	89	86	66	68
North	17·61	13·51	5·79	4·79	77	83	126	127
North I	20·72	13·35	6·36	5·01	64	79	125	133
" II	16·59	13·53	5·43	4·66	82	86	126	124
" III	14·68	12·45	5·62	4·78	85	85	116	127
" IV	18·14	14·15	5·72	4·74	78	83	132	126
Midland	12·42	9·52	3·93	3·31	77	84	89	88
Midland I	12·56	9·56	4·01	3·33	76	83	89	88
" II	12·15	9·44	3·78	3·26	78	86	88	86
East	8·75	7·52	3·20	2·88	86	90	70	76
South-West	8·26	7·49	3·07	2·54	91	83	70	67
Wales	13·62	9·33	4·85	4·06	69	84	87	108
Wales I	14·96	9·68	5·15	3·95	65	77	90	105
" II	9·48	8·31	3·96	4·37	88	110	78	116
County Boroughs*	17·08	12·94	5·37	4·40	76	82	121	117
Other Urban Districts* ..	12·20	9·20	4·45	3·56	75	80	86	94
Rural Districts*	9·56	8·29	3·34	3·09	87	93	77	82
Greater London—								
Administrative County ..	13·98	14·28	4·47	4·45	102	100	133	118
Outer Ring	8·71	9·13	3·39	3·01	105	89	85	80

* Outside Greater London.

The sensitiveness of mortality at age 1-2 to the general healthiness of the year has been pointed out in previous Reviews. It is to be expected that the most susceptible age would also exhibit the greatest range of regional variation. When the regional rates are expressed as percentages of the rate for England and Wales, their

range usually tends to increase during the first two years of life and then decrease, but in 1936 the range between the ages of 6 months and 2 years was less than in previous years, being 58–127 at 6–9 months, 59–127 at 9–12 months, 66–132 in the second year, and 67–133 at ages 2–5 (Tables XIV and XXVI).

The association with urbanization at these four age periods is reflected in the differences between the percentage rates for the county boroughs and rural districts outside Greater London, amounting to 58 at 6–9 months, 46 at 9–12 months, 44 at 1–2 years and 35 at 2–5, the range being maximal at 6–9 months.

Comparison of 1936 mortality with the mean rates in 1931–35 (Table XXVI) shows at ages 1–2 a decline of 18 per cent. in England and Wales, no improvement in Greater London (measles being epidemic in 1936), 9 per cent. decline in the South-West, 14 per cent. in the East, 23 per cent. in the North and 31 per cent. in Wales.

At 2–5 the fall in the national rate was 15 per cent., and amongst the separate regions the fall ranged from 7 per cent. in Greater London to 17 per cent. in the North and South-West. The rural district rate improved by 7 per cent. compared with 18 per cent. for the county boroughs.

The principal *causes of death* at ages 1–5 in 1936 were pneumonia measles, tuberculosis, diphtheria, whooping cough and violence.

Table XXVII provides a comparison of death-rates at 1–5 years of age from an extended list of causes in England and Wales during 1936 with the corresponding rates in 1911–14 and 1921–30.

Mortality from all causes combined at these ages was 35 per cent. of the rate in 1911–14 and 58 per cent. of that in 1921–30. The only cause showing an increase over 1921–30 was the group of

Table XXVII.—Deaths from Various Causes per Million living at Ages 1–5 Years in 1911–14, 1921–30 and 1936. (Both Sexes.)

Cause of Death.	Death-rate.			Cause of Death.	Death-rate.		
	1911–14.	1921–30.	1936.		1911–14.	1921–30.	1936.
7. Measles	2,673	1,104	796	105: 2. Laryngitis	152	51	18
8. Scarlet fever	373	143	82	106. Bronchitis	872	448	126
9. Whooping cough	1,216	864	413	107. Broncho-pneumonia ..	2,170	2,120	1,016
10. Diphtheria	781	535	464	108 & 109. Pneumonia (Lobar and not otherwise defined).	866	536	294
11. Influenza	60	270	77	Other Respiratory Diseases ..	140	80	46
23. Tuberculosis of Respiratory System.	237	136	62	118: 1. Inflammation of the Stomach.	94	43	10
24. Tuberculosis of Nervous System.	705	445	276	119 & 120. Diarrhoea and enteritis	1,639	468	178
25. Tuberculosis of Intestines and Peritoneum.	391	157	47	130. Acute nephritis	89	43	22
26–32. Other Tuberculous Diseases.	288	155	80	157. Congenital malformations.	85	79	79
63: 1. Rickets	172	93	26	181. Burns and scalds	360	247	167
79. Meningitis	451	188	83	Other Violence	274	239	273
86. Convulsions	460	179	71	Other Causes	1,071	847	794
				All Causes	15,619	9,470	5,502

violent causes other than burns and scalds. Scarlet fever, tuberculosis of the nervous system, gastritis, acute nephritis, rickets, burns and scalds and diarrhoea all established new low records.

The decline in mortality assigned to various infective and respiratory diseases and to meningitis, convulsions and rickets since 1921 is revealed by the annual rates in Table XXVIII.

Comparing the 1936 rates with the simple averages of the annual rates in 5 preceding triennial periods from 1921-23 to 1933-35 the rapid decline for whooping cough is shown by the series 1145, 858, 909, 514, 416, 413 and for bronchitis and pneumonia by the series 3489, 3062, 3176, 2069, 1707, 1436. These may well cease to be important causes of death amongst young children within another 15 years, and the same may be said of diarrhoea with 624, 464, 382, 271, 238, 178 as successive rates. Diphtheria with 655, 462, 495, 455, 511, 464 and scarlet fever with 199, 142, 95, 98, 130, 82 do not show such rapid improvement in recent years. Measles gave an average rate of 1,132 in the 6 years 1921-26 and 798 in the 6 years 1931-36. Meningitis, other than cerebro-spinal or tuberculous, and convulsions are tending to disappear as certified causes of death.

Table XXVIII.—Death-Rates from Various Causes per Million living at Ages 1-5 Years in each year 1921-1936.

—	Measles.	Scarlet Fever.	Whooping Cough.	Diphtheria.	Bronchitis and Pneumonia.	Diarrhoea and Enteritis.	Meningitis.	Convulsions.	Rickets.
1921 ..	603	198	853	778	3,305	990	288	321	109
1922 ..	1,530	229	1,838	723	4,461	403	263	268	86
1923 ..	1,332	169	745	464	2,700	479	233	219	98
1924 ..	1,155	149	716	438	3,368	424	205	189	94
1925 ..	1,326	172	1,108	473	3,033	466	188	191	102
1926 ..	848	105	749	474	2,784	502	165	153	86
1927 ..	950	90	743	448	3,339	358	157	133	80
1928 ..	1,122	92	572	504	2,250	368	120	99	02
1929 ..	965	102	1,411	533	3,940	419	138	117	89
1930 ..	1,142	116	401	552	1,792	276	111	89	78
1931 ..	923	87	540	427	2,487	271	114	87	80
1932 ..	988	92	602	387	1,929	266	126	85	66
1933 ..	571	129	494	394	1,986	300	106	77	41
1934 ..	1,117	166	446	607	1,761	213	97	66	35
1935 ..	392	94	307	531	1,373	200	80	60	38
1936 ..	796	82	413	464	1,436	178	83	71	26

London mortality at 1-2 years from all causes was 1,428 per 100,000 living in 1936 compared with 693 in 1935 and an average of 1,566 in the preceding 4 years. The rate at 2-5 years of age was 445 per 100,000 compared with 248 in 1935 and an average of 499 in 1931-34. The London experience for each year from 1922 to 1936 is shown in Table XXIX. Measles, whooping cough, pneumonia, and diphtheria have been chiefly responsible for the large fluctuations in mortality during the second year of life, and when these causes together with influenza are omitted, the residual death-rates have followed a declining course with relatively slight fluctuations. The influence on total mortality of the biennial measles epidemic is also evident at ages 2-5.

Table XXIX.—Mortality from Various Causes at 1-2 and all causes at 2-5 Years of Age in London Administrative County in each year 1922 to 1936.

	1-2 years.								2-5 years.	
	Death-rate per 1,000 Living.							Death-rate per cent. of England and Wales.	Death-rate from all causes.	
	Diphtheria.	Measles.	Whooping Cough.	Influenza.	Pneumonia.	Other Causes.	All Causes.		Per 1,000 Living.	Per cent. of England and Wales.
1922 ..	2.22	8.08	5.16	1.25	12.81	7.25	36.77	148	12.03	155
1923 ..	0.84	1.87	1.47	0.09	4.51	6.47	15.25	81	5.26	93
1924 ..	0.73	6.93	2.12	0.50	9.05	5.91	25.24	115	6.84	117
1925 ..	0.59	1.87	3.42	0.21	5.99	5.62	17.70	82	5.30	87
1926 ..	0.97	5.55	0.99	0.09	6.15	5.36	19.11	104	5.19	99
1927 ..	0.71	1.04	2.38	0.38	6.15	5.24	15.90	81	4.81	83
1928 ..	1.07	8.33	2.01	0.25	5.64	5.25	22.55	139	5.71	114
1929 ..	0.64	1.44	6.19	1.06	9.75	5.55	24.63	105	5.68	86
1930 ..	0.95	7.55	0.61	0.05	4.35	5.02	18.53	135	4.70	101
1931 ..	0.52	0.76	1.59	0.34	5.13	4.94	13.28	85	4.15	86
1932 ..	0.62	6.38	1.78	0.15	3.87	5.36	18.16	128	5.62	124
1933 ..	0.47	0.68	1.89	0.28	4.27	4.31	11.91	91	4.33	98
1934 ..	0.88	7.13	1.75	0.09	4.93	4.50	19.29	151	5.87	127
1935 ..	0.36	0.09	0.84	0.08	2.18	3.38	6.93	72	2.48	68
1936 ..	0.33	4.80	1.61	0.12	3.75	3.67	14.28	133	4.45	118

Table XXX gives the mean annual death-rates at 1-5 from the chief causes during 1931-35 and 1936 in each region and density aggregate, pneumonia being combined with bronchitis owing to regional peculiarities in the certification of these two diseases as causes of death amongst young children.

The diphtheria rate in 1936 was below the mean annual rate of 1931-35 in Greater London, the South-East, East and Wales I, but was appreciably higher in North I and II, and Midland II. Measles mortality was lower in North I and IV, the Midland regions and Wales I, but higher in Greater London, the South-East, North II and Wales II. Whooping cough registered a general improvement in most areas but not in Wales nor Midland II, and the combined pneumonia and bronchitis rate was below that of 1931-35 in every region and class of area, the fall being considerable in the North, Midlands and Wales. Tuberculosis rates also showed a general decline, this being evident in every region except Wales I. Mortality from violent causes, which showed no tendency to decline in England and Wales as a whole, registered increases in Wales II, Midland II, the East and South-West but some improvement in Greater London and Midland I.

Mortality from all causes at 1-5 years in 1936 was 98 per cent. of that in 1931-35 in Greater London, 79 per cent. in the county boroughs, 78 per cent. in other urban districts and 90 per cent. in the rural districts, and for the combined mortality from measles, whooping cough, bronchitis and pneumonia the percentages were 111, 77, 71 and 85 respectively.

Table XXX.—Mortality per 100,000 living from Various Causes at 1–5 years in Geographical Regions and Density Aggregates, 1931–35 and 1936.

		England and Wales.	Greater London	County boroughs *	Other Urban districts *	Rural districts *	South-East *	Wales I	Wales II
ALL CAUSES	.. { 1931–35 1936 ..	656 550	579 566	826 654	635 496	484 437	419 369	755 537	527 531
Diphtheria..	.. { 1931–35 1936 ..	47 46	55 39	59 64	43 42	25 31	26 17	64 46	48 48
Measles ..	.. { 1931–35 1936 ..	80 80	88 147	118 102	65 42	34 29	30 42	88 16	38 51
Whooping-cough ..	.. { 1931–35 1936 ..	48 41	50 46	63 51	41 36	31 28	29 17	41 46	29 32
Pneumonia and Bronchitis	{ 1931–35 1936 ..	191 144	145 121	258 187	189 131	132 110	108 100	225 136	129 94
Tuberculosis	.. { 1931–35 1936 ..	60 47	49 40	72 51	62 50	49 40	55 42	55 58	46 35
Violent causes	.. { 1931–35 1936 ..	44 44	35 31	48 48	44 45	49 50	33 31	61 63	45 59
		North I.	North II	North III	North IV.	Midland I.	Midland II.	East.	South-West.
ALL CAUSES	.. { 1931–35 1936 ..	985 706	818 689	784 669	879 710	609 488	582 480	455 403	433 376
Diphtheria..	.. { 1931–35 1936 ..	42 85	70 90	68 73	66 68	30 34	27 37	23 17	29 35
Measles ..	.. { 1931–35 1936 ..	141 62	87 97	84 84	132 118	69 52	57 31	34 38	32 33
Whooping-cough ..	.. { 1931–35 1936 ..	60 53	48 19	53 52	67 66	51 37	39 42	39 28	31 19
Pneumonia and Bronchitis	{ 1931–35 1936 ..	323 200	278 207	239 195	276 190	183 139	177 132	117 105	102 88
Tuberculosis	.. { 1931–35 1936 ..	87 60	78 68	68 57	66 53	56 39	59 33	57 54	50 35
Violent causes	.. { 1931–35 1936 ..	54 52	54 56	51 48	55 52	46 41	43 56	38 46	36 43

* Excluding Greater London.

Mortality at 5–15.—The increase which occurred between 1932 and 1934 in the death-rate of children aged 5–10, due in the main to diphtheria, was followed by a fall in 1935 and again in 1936, the rates for those years being the lowest yet recorded. For diphtheria, although the rate declined from the high level of 610 reached in 1934 to 517 per million living in 1935 and 480 in 1936, it was higher than in any of the years 1922–33. Table XXXI shows that the residual rate from all causes except diphtheria fell to 1·97 per 1,000 in 1923, fluctuated slightly until 1929, declined again to 1·77 by 1932, remained at 1·82 in 1933 and 1934, and fell below 1·5 in 1936. The measles rate has not manifested any consistent change at this age during the last 14 years, but the pneumonia rate has tended to

decline. Mortality from diseases of the ear and mastoid which increased considerably from 41 per million in 1922 to 89 in 1934 was 66. The risk of death from violence continued to fall from the high levels reached about 1929. The tuberculosis rate also continued its steady decline.

Table XXXI.—Death-Rates at Ages 5-10 per Million Living from Various Causes, 1921-36.

—	All Causes.	Diphtheria.	All except Diphtheria.	Measles.	Tuberculosis, all forms.	Diseases of Ear and Mastoid.	Pneumonia.	Violence.
1921 ..	2,759	542	2,217	47	408	51	285	255
1922 ..	2,562	411	2,152	111	388	41	260	244
1923 ..	2,252	282	1,971	99	391	44	243	239
1924 ..	2,302	253	2,049	98	367	47	259	261
1925 ..	2,470	308	2,161	129	354	42	294	264
1926 ..	2,427	374	2,053	87	341	57	267	276
1927 ..	2,332	309	2,023	81	332	56	303	299
1928 ..	2,329	372	1,957	117	318	54	242	307
1929 ..	2,461	392	2,069	77	297	57	297	328
1930 ..	2,282	410	1,872	116	286	61	215	307
1931 ..	2,144	320	1,824	90	263	59	229	296
1932 ..	2,070	298	1,773	103	243	63	212	294
1933 ..	2,194	377	1,817	61	224	73	228	302
1934 ..	2,428	610	1,819	133	225	89	196	272
1935 ..	2,032	517	1,515	47	195	62	156	264
1936 ..	1,977	480	1,497	88	180	66	166	257

Table XXXII compares the death-rates during 1931-35 and 1936 from several important causes at the ages of school life, 5-15, in the regions and density aggregates. The diphtheria rate in 1936 was below the mean annual rate of 1931-35 in Greater London, the South East, East and Wales I, as was the case at ages 1-5, but was

Table XXXII.—Mortality per 100,000 living from Various Causes at 5-15 years in Geographical Regions and Density Aggregates, 1931-35 and 1936.

—	England and Wales.	Greater London.	County boroughs *	Other Urban districts *	Rural districts *	South-East *	Wales I	Wales II
ALL CAUSES .. { 1931-35 ..	177	163	200	177	154	144	195	170
1936 ..	157	134	182	158	137	127	147	152
Diphtheria .. { 1931-35 ..	25	24	32	24	17	18	29	31
1936 ..	28	17	38	31	19	15	21	27
Tuberculosis, all forms { 1931-35 ..	23	18	29	23	19	16	30	25
1936 ..	18	14	23	18	14	15	22	18
Heart disease .. { 1931-35 ..	11	11	13	11	8	6	19	9
1936 ..	10	9	12	10	7	6	15	13
Diseases of digestive system .. { 1931-35 ..	16	15	17	17	17	15	18	21
1936 ..	15	13	16	15	15	13	17	15
Violent causes .. { 1931-35 ..	22	23	22	21	22	20	22	17
1936 ..	20	19	19	20	21	19	17	15

* Excluding Greater London.

Table XXXII.—*contd.*

—		North I.	North II.	North III.	North IV.	Midland I.	Midland II.	East.	South- West.
ALL CAUSES	.. { 1931-35 1936 ..	226 193	211 196	214 175	208 201	166 164	153 143	147 115	138 137
Diphtheria ..	.. { 1931-35 1936 ..	20 49	42 49	46 43	36 46	18 25	12 26	17 8	15 19
Tuberculosis, all forms	{ 1931-35 1936 ..	48 30	33 25	22 17	25 23	20 15	21 19	22 14	17 11
Heart disease	.. { 1931-35 1936 ..	12 11	12 11	14 12	14 13	10 10	11 9	6 6	7 7
Diseases of digestive system ..	{ 1931-35 1936 ..	19 16	17 14	18 12	18 18	16 16	15 18	18 8	15 16
Violent causes	.. { 1931-35 1936 ..	23 18	21 21	23 19	23 23	24 24	21 17	16 19	17 19

appreciably higher in North I and IV and the Midlands, with slight increases also in North II and the South-West. Tuberculosis declined in every region, the improvement being specially great in North I and II, the East, South-West and Wales. Heart disease rates were highest in Wales and North IV, and considerably higher in the county boroughs than the rural districts. Mortality from violent causes was slightly greater in rural areas than in Greater London or the towns, Midland I having the highest rate, as in 1931-35, and Wales and Midland II the lowest.

Mortality of the Aged.—Persons over 70 years of age numbered 297 per 10,000 total population in 1911, 344 in 1921, and 426 in 1931, and were estimated as forming 477 per 10,000 in 1936.

The causes of death at ages over 70 are grouped, as in previous years, in Table XXXIII.

The outstanding changes in the proportionate distribution of certified causes which have occurred between 1921-30 and 1936 are seen to be a decline in the deaths classed to bronchitis and old age and a corresponding rise in those classed to heart diseases. Cancer now accounts for 12 per cent. of these deaths.

Centenarians.—Among the deaths registered during the year there were 96 of reputed centenarians, 14 of whom were males and 82 females. In the preceding three years the numbers were 110, 76 and 95 respectively. Particulars of the ages returned and of the regions concerned are given in Table XXXIV.

Table XXXIII.—Mortality over 70 Years of Age in 1911–20, 1921–30, 1934, 1935 and 1936, from the chief Causes of Death.

	Deaths from each Cause per 1,000 Total Deaths.					Mortality per 1,000 Living.				
	1911– 20.	1921– 30.	1934.	1935.	1936.	1911– 20.	1921– 30.	1934.	1935.	1936.
MALES										
Influenza (11)	20	26	9	11	9	2.3	2.8	0.9	1.2	1.0
Cancer (45–53)	81	107	125	126	124	9.4	11.8	13.0	13.3	13.6
Heart Diseases (90–95)	148	205	335	339	359	17.1	22.7	34.8	35.8	39.5
Disease of Blood Vessels, including Cerebral Hæmorrhage (82, 96, 97, 99 and 100)	163	195	169	165	161	18.8	21.6	17.6	17.4	17.8
Bronchitis (106)	137	110	54	49	51	15.9	12.1	5.6	5.2	5.7
Pneumonia (107–109)	34	35	31	30	30	4.0	3.9	3.3	3.2	3.3
Chronic Nephritis (131 and 132)	29	29	34	34	32	3.3	3.2	3.6	3.6	3.5
Old Age (162)	222	140	76	79	75	25.7	15.5	8.0	8.3	8.2
Other Causes	166	153	167	167	159	19.0	17.2	17.4	17.7	17.7
All Causes	1,000	1,000	1,000	1,000	1,000	115.5	110.8	104.2	105.7	110.2
FEMALES.										
Influenza (11)	24	31	11	14	11	2.3	3.0	1.0	1.2	1.0
Cancer (45–53)	87	105	118	116	114	8.7	10.2	10.4	10.3	10.5
Heart Diseases (90–95)	153	223	347	360	375	15.2	21.6	30.6	32.0	34.6
Disease of Blood Vessels, including Cerebral Hæmorrhage (82, 96, 97, 99 and 100)	157	181	170	170	166	15.5	17.6	15.0	15.2	5.3
Bronchitis (106)	149	117	56	48	50	14.8	11.4	4.9	4.3	4.6
Pneumonia (107–109)	32	34	32	29	31	3.2	3.3	2.8	2.6	2.8
Chronic Nephritis (131 and 132)	21	23	29	30	27	2.1	2.2	2.6	2.7	2.5
Old Age (162)	248	165	99	100	93	24.6	16.0	8.7	8.9	8.6
Other Causes	129	121	138	133	133	12.7	11.7	12.2	11.8	12.1
All Causes	1,000	1,000	1,000	1,000	1,000	99.0	97.0	88.3	88.9	92.1
PERSONS.										
Influenza (11)	22	29	10	13	10	2.3	3.0	0.9	1.2	1.0
Cancer (45–53)	85	106	121	120	118	9.0	10.8	11.5	11.5	11.8
Heart Diseases (90–95)	151	215	341	350	368	16.0	22.0	32.4	33.6	36.6
Disease of Blood Vessels, including Cerebral Hæmorrhage (82, 96, 97, 99 and 100)	159	187	169	168	164	16.9	19.2	16.1	16.1	16.3
Bronchitis (106)	144	114	55	49	51	15.2	11.7	5.2	4.7	5.1
Pneumonia (107–109)	33	34	32	30	30	3.5	3.5	3.0	2.9	3.0
Chronic Nephritis (131 and 132)	24	26	32	32	29	2.6	2.6	3.0	3.1	2.9
Old Age (162)	237	154	89	90	85	25.0	15.8	8.4	8.7	8.5
Other Causes	145	135	151	148	145	15.3	14.0	14.3	14.2	14.4
All Causes	1,000	1,000	1,000	1,000	1,000	105.8	102.7	94.9	95.8	99.6

Table XXXIV.—Age at Death of Centenarians, 1936.

—	Males.							Females									
	100 and over	100	101	102	103	104	105	100 and over	100	101	102	103	104	105	106	107	108
Greater London..	4	3	—	—	1	—	—	22	8	7	2	1	2	—	1	—	1
Remainder of South- East ..	2	2	—	—	—	—	—	16	7	4	4	—	—	1	—	—	—
North	3	—	1	—	1	—	1	8	4	1	1	1	—	—	—	1	—
Midlands ..	3	2	—	1	—	—	—	12	7	3	1	1	—	—	—	—	—
East	—	—	—	—	—	—	—	7	5	2	—	—	—	—	—	—	—
South-West ..	2	2	—	—	—	—	—	11	3	4	2	2	—	—	—	—	—
Wales	—	—	—	—	—	—	—	6	2	2	1	—	1	—	—	—	—
England and Wales	14	9	1	1	2	—	1	82	36	23	11	5	3	1	1	1	1

CAUSES OF DEATH.

The causes of death of males and females at 18 groups of ages are stated in Table 21 for the whole country, and in Table 22 further detail of age is shown for all causes of significance at ages 0-5. In Table 23 deaths from each cause distinguished are tabulated by month of occurrence and by sex (but not by age). Table 23 differs from all others in referring to date of occurrence and not of registration. Table 21 includes the full International List of causes of death, as revised in 1929. Certain of the numbered items in it are subdivided, and where this occurs the letters (*a*), (*b*), &c., indicate subdivisions in international use, and numbers (1), (2), &c., subdivisions made without international agreement. All other abstracts of the causes of death are arranged in the form of the short list of causes adopted by the Registrar-General in consultation with the Ministry of Health for use during 1931-40. The relation of this list to the detailed International List, as revised by the International Commission in 1929, is shown at the head of Table 24. In Table 6 each cause in the detailed list is also accompanied by the number, in italics, in which the cause is included in the Intermediate List of Causes of Death.

The contents of every heading in the short, intermediate and detailed lists now in use are defined in the Registrar-General's "Manual of the International List of Causes of Death" (1929 Revision),* which should be consulted in all cases where it is desired to ascertain the precise significance of any heading in the lists.

Where two or more causes of death are jointly stated, the classification of the death to one or other of the causes in the International List is carried out in conformity with rules of selection, whose general principles are laid down in the Manual. Thus, with certain exceptions, deaths from violence associated with disease are classed to the appropriate violent cause, and deaths from an infectious disease associated with a local disorder such as a cardiac or renal lesion are classed to the infectious disease. Deaths are therefore not always classed to the immediate cause, but in some instances to a more remote one leading up to it or to a cause which was regarded by the certifying physician as merely contributory. These rules for selection have not been seriously modified since 1901, so that continuity in the resulting tabulation has been maintained. Sufficient understanding and experience of the new form of certificate, introduced in 1927, had first to be gained before replacing the code of selective rules by the expressed opinion of the certifier. However desirable it may seem to make the change at once for certain combinations of causes, the importance of safeguarding the continuity of the statistics of causes of death must outweigh such considerations until the quality of certification is such as to justify reliance upon

* Copies may be obtained from H.M. Stationery Office. Price 3s. net.

the order of statement for all combinations of causes. Sample studies of death certificates during 1935 indicated that such a position would shortly be reached.

In a sample of 9,892 certificates given by medical practitioners, analysed in Table XXXV of the Review for 1935, 43 per cent. named more than one cause of death, these being entered in the same space on the certificate in 1·5 per cent., and in separate spaces but in a clearly impossible order in 1·1 per cent. The remainder with apparently satisfactory multiple entries included some combinations of causes, such as chronic bronchitis with myocardial degeneration, for which it would not be possible to say whether the order of statement was the one intended by the certifier or not, that is to say, an inverted entry could not always be detected. Such reversible combinations of causes form a minority of the combinations met with on death certificates and even if they comprised as many as one-third of all certificates with multiple causes and were subject to the same proportion of errors as the irreversible combinations, this would only raise the true proportion of "inverted entry" certificates to about $1\frac{1}{2}$ per cent. of the total. The proportion of death certificates to which rules of selection would still have to be applied in order to obtain a satisfactory statistical classification has fallen, therefore, to about 3 per cent., this proportion of unsatisfactory certificates being higher in London than in the rest of England and Wales as a whole, and lowest in North IV and Wales I. It was also rather lower amongst deaths certified in institutions than amongst other deaths. For deaths certified by coroners, which formed 8 per cent. of the sample, different forms of medical certificate are used, and the classification of such deaths, mainly due to or contributed to, by some form of external violence, forms a special problem from which the use of certain rules of selection could not be entirely eliminated.

The sample study showed also that the change in the system of selecting the essential cause from two or more causes of death, when it is made, must involve important increases in the numbers of deaths classified to certain causal groups in the International List and important decreases for other groups. If statistical continuity is to be maintained between the periods before and after the change in the system of selection is made, the extent of the transfer of deaths from every cause to every other which will be occasioned by the change must first be carefully evaluated. For this purpose during the quinquennium 1936-1940 a dual tabulation of deaths is being prepared according to cause as determined by (1) the code of selective rules as now used and (2) the order of preference stated on the medical certificate of death (supplemented by the rules in cases where the preference is not clearly stated). By means of this dual tabulation the precise effects on statistical continuity of the change in the system of selection when this is carried out in a subsequent year will be measured and the necessary steps to allow of correction

for the change will be taken. References are made under various cause headings of this Review to some of the alternative figures which would result in 1936 by following the physician's preference, but apart from such extracts from the dual tabulation all mortality figures in the Review continue to be based upon the unchanged system of rules.

Special secondary tabulations according to the associated cause are made for deaths connected with anæsthetics, alcoholism and childbearing, and are included in this Review.

In Table 24 deaths are shown for the several geographical regions of the country, for urban and rural portions of administrative counties, and for county and metropolitan boroughs, arranged by sex, age, and the short list of causes as set out at the head of the table. The same information, though not by age, is also available for each individual administrative area.

In addition to the above tables, which relate exclusively to the year 1936, Table 6 contains a statement of the number of deaths registered in each year 1926–36 from each cause distinguished in Table 21 so far as available, with distinction of sex but not of age; while Table 7 states the corresponding crude death-rates per million living for persons, males and females, so far as these can be regarded as of any significance, no rates being shown for causes which give a rate of less than five per million population. But the crude rates in Table 7 are liable to be misleading as indices of the progress of mortality even where their numerical basis is adequate. Owing to the rapid ageing of the population at the present time as a result of simultaneous fall in birth and death-rates the rates shown in Table 7 for causes mainly affecting old people tend automatically to increase, and thus to overstate mortality from such causes as cancer, cerebral hæmorrhage and heart disease. As this overstatement has become seriously misleading in many cases, Table 8 is inserted to correct it by showing the course of mortality from each cause dealt with when allowance is made for such population changes by standardization (*see* page 1). Owing to the clerical labour involved in the preparation of these rates the list of causes in Table 8 is much shorter than that in Table 7, and rates are shown only for males and females separately. Standardized rates for both sexes jointly are given for a few causes in Table 9. Tables Nos. 11 and 12 state the mortality during the eleven years 1926–36 of infants under one year of age from the causes of chief importance at that age, but without distinction of sex.

1, 2. Typhoid and Paratyphoid Fevers.—The number of deaths classified to this heading during 1936 was 257. Of these, 41 were ascribed to paratyphoid infection, forming 16 per cent. of the total compared with 18 per cent. in the preceding period of 5 years.

The standardized rate corresponding to these deaths, 6 per million persons living (Table 9), compares with rates of 5, 4 and 4 in the three preceding years, which were the lowest recorded. This rate

is quite trifling compared with those of earlier years, the rate for 1871-75 for instance, having been 371 per million, or over 60 times that for 1936.

The distribution of this mortality throughout the country is outlined in Table XXXV.

Table XXXV.—Typhoid and Paratyphoid Fevers ; Mortality, Prevalence and Fatality at all ages. Measles and Whooping Cough ; Mortality at ages under five years, and Proportion of Deaths occurring in the First One or Two Years of Life, 1936.

	Typhoid and Paratyphoid Fevers.			Measles.		Whooping Cough.	
	Deaths per million living.	Cases† per million living.	Deaths per 1,000 cases notified.	Deaths per 100,000 living at 0-5.	Deaths at 0-2 per cent. of those at all ages.	Deaths per 100,000 living at 0-5.	Deaths at 0-1 per cent. of those at all ages.
England and Wales	6	61	103	86	60	71	51
South-East	9	80	110	109	59	60	52
Greater London ..	8	65	120	151	61	76	49
Remainder of South-East ..	10	104	99	45	48	36	58
North	4	40	95	109	63	84	46
North I	7	67	101	78	60	74	41
„ II	6	101	62	104	64	42	59
„ III	2	31	74	94	58	82	49
„ IV	3	22	138	132	66	98	45
Midland	4	45	94	46	56	74	56
Midland I	3	32	107	52	52	74	58
„ II	6	70	82	35	71	74	52
East	5	40	135	40	57	53	53
South-West	13	156	83	36	46	44	59
Wales	6	43	140	26	49	91	61
Wales I	6	46	129	15	55	91	58
„ II	6	32	182	58	46	92	70
County boroughs* ..	6	57	102	110	63	85	51
Other urban districts*	6	69	86	49	57	63	52
Rural districts*	6	51	119	31	42	55	55
Greater London :—							
Admin. County ..	7	67	111	212	65	105	51
Outer Ring ..	8	63	129	99	55	51	47

* Excluding Greater London.

† Including cases in Port Sanitary Districts.

The highest mortality rate in 1936 for any region was that for the South-West with 27 deaths and the South-East excluding Greater London with 58 deaths. Of the former total 20 in the county of Dorset and of the latter total 29 in Bournemouth and 9 in the Administrative county of Southampton were the outcome of a

single epidemic of 718 cases. North III, North IV and Midland I show the lowest rates. Excess of mortality in the small towns had been the general rule during the twenty years preceding 1933, but in the last four years this has no longer been true.

The highest mortality rate recorded in Table 10 is, for counties of over 100,000 population, 80 per million in Dorset and 18 in Northampton, Southampton, and Lincoln (Kesteven). The county boroughs with highest rates are Bournemouth (243) and West Hartlepool (28).

The fatality rate of 103 per 1,000 notified cases was the lowest recorded save in 1932 and 1935 (Table XXXVI). Its variation throughout the various regions in 1936 is shown in Table XXXV.

Table XXXVI.—Fatality of certain Infectious Diseases (Deaths per 1,000 Notified Cases), 1911–36.*

Year.	1. Enteric (typhoid and para- typhoid) fever.	6. Small-pox.	8. Scarlet fever.	10. Diphtheria.	15. Erysipelas.	16. Poliomyelitis (including polioencepha- litis).	17. Encephalitis lethargica.	18. Cerebro- spinal fever (meningo- coccal meningitis).
1911	174	78.0	18.1	103	39	?	?	?
1912	191	73.2	18.6	96	39	?	?	?
1913	182	87.0	16.1	88	35	283	?	1,089
1914	194	61.5	17.2	99	42	348	?	1,257
1915	199	141.3	18.6	107	46	331	?	630
1916	174	113.2	17.8	101	39	270	?	656
1917	205	333.3	15.3	100	43	469	?	663
1918	201	30.8	20.5	106	47	1,004	?	673
1919	147	77.6	14.7	90	42	297	533	727
1920	171	114.1	12.0	81	52	404	539	911
1921	158	15.9	9.5	72	55	314	493	1,007
1922	191	27.7	12.7	78	53	352	742	1,047
1923	140	2.8	11.6	68	50	185	517	934
1924	120	3.5	10.5	60	52	183	279	746
1925	139	1.7	10.8	58	57	370	520	876
1926	133	1.8	8.3	59	55	181	583	926
1927	103	3.2	6.8	52	56	203	713	911
1928	124	4.3	5.7	52	55	306	819	1,061
1929	133	3.6	6.0	55	58	263	999	882
1930	106	2.4	6.7	47	56	212	1,241	938
1931	110	1.6	6.6	53	66	247	1,471	650
1932	101	1.5	6.2	54	68	237	1,463	568
1933	126	3.2	5.6	56	66	253	1,887	556
1934	131	33.5	6.3	59	71	201	1,917	666
1935	99	—	4.8	54	63	229	2,550	699
1936	103	—	4.7	53	60	175	2,550	639

* The rates in this table are given with reserve, being in some respects unsatisfactory. For the years 1911–13 cases of disease among non-civilians have been excluded from the notification returns, but it has not been possible to distinguish their deaths; for the years 1920–1925 inclusive both cases and deaths relate to civilians only; for all other years the figures relate to the total population.

The numbers relating to small-pox in some years are too small to yield significant rates, but their basis of fact can be ascertained from Tables 6 and 28, and the rates quoted serve to bring out the extremely mild type of disease prevalent since 1920. The rates for poliomyelitis include polioencephalitis, which was not distinguished in the notification returns until 1919. The extraordinary rise in 1918 is partly ascribable to certification of a number of deaths from the then "new disease," encephalitis lethargica, as polioencephalitis, but mainly to a reduction in notifications unaccompanied by significant change in the number of deaths (*see* Report for 1918). The rates from this disease will be found to differ from some of those published in the Annual Reports of the Chief Medical Officer of the Ministry of Health, partly because polioencephalitis is included throughout and partly because special inquiries made by the Ministry in certain years have led to revision of the returns for those years, which is not embodied in Table XXXVI. The cases there referred to are similar for each year dealt with, being in all cases derived from the published notification returns. The latter source of discrepancy applies also to cerebro-spinal fever, and in this case there is a possibility that some cases of posterior basal meningitis may not have been notified as cerebro-spinal fever though all such deaths are included in the table.

Prevalence was highest in the South-West and lowest in North IV. The proportion of paratyphoid to total notifications ranged from 8·3 in the South-West to 30·0 in the South-East, 33·8 per cent. in the Midlands, 34·9 in the North, 37·4 in Wales and 45·9 in the East.

6. **Small-pox.**—No deaths were allocated to this cause during 1936, this being the second year in succession in which no death was recorded. The mortality record for this disease is contained in Table 9, which shows that the standardized rate was less than 0·5 per million, indicated by 0 in the table, in eighteen other years since the 1901–05 epidemic. In the remaining eleven of these years the rate has been one per million.

Twelve cases of small-pox were notified (8 at Oldham, 2 at Brighton and 2 at Hove) compared with 1 in 1935, 179 in 1934, 631 in 1933 and 2,039 in 1932.

7. **Measles.**—The deaths registered from this cause numbered 2,751 corresponding to a mortality of 67 per million population. But allowance for decreased proportion of children in the present population increases the rate on standardization from 75 to 115 for males and from 61 to 103 for females. The death-rate for children under 15 years of age, 297 per million, is seen from Table 9 to be the lowest recorded, save in 1921, 1933 and 1935.

Measles is most commonly certified in conjunction with some respiratory or other complication over which it is given high preference by the selective rules. Classification in accordance with the physician's choice of essential cause would reduce the deaths assigned to measles from 2,751 to 2,587.

The distribution throughout the country of mortality from measles is stated in Table XXXV in the form of death-rates per 100,000 living at ages 0–5. Deaths at these ages in 1936 formed 87 per cent. of the total, and statement of mortality at these ages prevents the comparison being prejudiced by varying proportions of children in the populations compared. The regions showing the highest rates were Greater London and North IV.

The Table also demonstrates to what an extent measles mortality is enhanced by urban conditions, the county borough rate of 110 being more than 3 times that in the rural districts, a similar gradation with urbanisation having been evident in each of the 26 years for which the facts are available. The proportion of deaths which occurred at ages under 2 years was 42 per cent. in the rural districts and 63 per cent. in the county boroughs, being lowest in Wales II and the South-West.

The relations of measles mortality at ages under 5 to latitude and to overcrowding were demonstrated in the Review for 1934 (Table XXXVII), where the average rates during 1921–34 for the county boroughs were found to increase very greatly with the overcrowding rate in each zone of latitude, but were not greatly affected

by northerliness of situation when towns with similar indices of overcrowding were compared. The large effect of the parents' social class on mortality at 1-2 years is shown in Table XXI of this Review.

Table 10 shows that, of administrative counties with over 100,000 population, London returned the highest death-rate at all ages in 1936, 141 per million, Denbigh with 95 coming next. The highest county borough rates were—Warrington, 354, Salford 228, Kingston-upon-Hull 212, Birkenhead 209 and Liverpool 206.

8. Scarlet Fever.—Deaths registered from this cause numbered 495 compared with 573 in 1935 and 963 in 1934. Scarlet fever is sometimes certified as merely a contributory cause of death, and classification of multiple-cause deaths according to the physician's choice of essential cause rather than by selective rules would reduce the deaths assigned to scarlet fever from 495 to 439. The death rate at ages under 15, 43 per million living, was the lowest ever recorded.

The progress of the decline from the maximum decennial rate of 1861-70 (Table 9) may be traced in the following statement of proportionate figures for subsequent periods, taking the rate of 2,617 in that decade as 1,000—1871-80, 729; 1881-90, 345; 1891-1900, 168; 1901-10, 119; 1911-20, 54; 1921-30, 28; 1931-35, 22; 1936, 16. The records of individual years since 1881 indicate that, ignoring increases which were not maintained over at least two years, the downward trend has been interrupted by short periods of rising rates, such periods being 1888-90, 1891-93, 1898-1902, 1911-14, 1917-20, 1928-30 and 1932-34. Save in 1934 each successive maximum has been lower than the preceding one. Several of the periods of increase were coincident with similar periods of rise in the diphtheria death-rate (1891-93, 1912-14, 1917-20, 1928-30, 1932-34). Prevalence as measured by the notification rate decreased by 13 per cent. in 1936 compared with the preceding year.

Table XXXVI shows that the fatality ratio of deaths to notified cases was 4.7 in 1936 compared with a mean rate of 5.9 per 1,000 cases notified in the preceding five years and 17.7 at the commencement of the record in the quinquennium 1911-15.

The distribution of the disease according to urbanisation and geographical location is given in Table XXXVII. Decreased prevalence compared with 1935 is recorded in every region except Wales. The notification rate was greatest in North I, followed by North III, and lowest in the South-West, and it showed as usual an increase with urbanisation, from 217 in the rural districts to 285 in the county boroughs. The fatality ratios were lowest in Midland II and highest in North I.

Children under 5 provided 40.2 per cent. of the deaths, compared with 41.0 in 1935, 42.3 in 1934, 44.2 in 1933 and 45.7 in 1932. The death-rates per million living at ages 0-5, 5-10, 10-15 and 15-20

respectively in 1931–35 were 98, 60, 19 10, compared with 87, 59, 19, 8 in 1926–30 and 154, 93, 30, 15 in 1921–25. In 1936 they were 71, 49, 14 and 7.

Table 10 shows that, amongst counties with over 100,000 population, mortality was highest in Durham (48 deaths per million) and Warwickshire (26).

The highest rates amongst the county boroughs (average 12) were those of Doncaster (57), Great Yarmouth (55) and South Shields (54).

Table XXXVII.—Scarlet Fever and Diphtheria, 1936 : Mortality at Ages under 15 Years, Prevalence and Fatality at All Ages.

	Scarlet Fever.				Diphtheria.		
	Deaths per million living at 0–15.	Cases per 100,000 living at all ages.	Deaths per 1,000 cases notified.	Deaths at 0–5 per 100 at all ages.	Deaths per million living at 0–15.	Cases per 100,000 living at all ages.	Death per 1,000 cases notified.
England and Wales ..	43	257†	4·7	40	318	142	53
South-East	34	229	4·2	39	195	108	41
Greater London ..	36	259	4·0	42	224	131	38
Remainder of South-East	31	182	4·6	34	151	74	50
North	59	310	5·4	44	514	207	60
North I	99	419	7·2	57	559	260	61
„ II	35	239	5·2	25	573	160	90
„ III	80	359	5·9	38	485	205	56
„ IV	36	259	4·1	42	497	200	57
Midland	35	274	4·0	32	269	125	54
Midland I	39	265	4·8	29	265	130	51
„ II	29	291	2·7	42	278	115	58
East	29	178	5·2	29	103	53	53
South-West	26	136	4·6	23	225	70	73
Wales	46	243	4·9	50	285	157	48
Wales I	42	236	4·6	55	276	149	49
„ II	59	263	5·5	40	312	176	44
County boroughs* ..	41	285	4·3	37	433	184	56
Other urban districts*	44	249	4·8	47	321	132	58
Rural districts* ..	51	217	6·8	34	213	96	58
Greater London :—							
Admin. County ..	39	261	3·9	52	254	172	32
Outer Ring ..	34	257	4·0	33	198	92	49

* Excluding Greater London.

† Including Port Sanitary Districts.

9. Whooping Cough.—The deaths allocated to this heading numbered 2,090 (956 males and 1,134 females) compared with 1,584 in 1935. Classification of deaths attributed to whooping cough in combination with some other cause in accordance with the physician's choice of essential cause rather than by selective rules would reduce

the total deaths assigned to whooping cough from 2,090 to 1,895. The excess for females is shown by Table 6 to be a constant feature of this disease, and it tends to increase with age. The percentage ratios of the numbers of female deaths to male deaths in 1936 are 105 at 0–3 months, 95 at 3–6 months, 103 at 6–12 months, and 135, 155 and 130 in the second, third and fourth years of life respectively, the ratios between the death-rates being slightly higher owing to the excess of males at risk at these ages. An increasing female excess after 3–6 months has been a constant feature of the records of the last four decades.

The standardized death-rate of 76 for males is the lowest recorded save in 1930, 1934 and 1935, and for females that of 93 is the lowest except in 1930 and 1935. The death-rate permillion living at ages under 15 reached a maximum of 1,511 for the five years 1866–70, after which, with a single exception, the quinquennial rates have progressively declined to 239 in 1931–35. In 1936 the rate was 228 (Table 9).

The distribution of mortality at ages under 5 and the proportion of deaths under 1 year of age are given in Table XXXV. The average rates during the quinquennial periods 1926–30 and 1931–35 and the rates in 1936 at ages under 5 are :—

	London.	County boroughs.	Urban districts.	Rural districts.
1926–30 ..	130	133	106	90
1931–35 ..	97	93	65	56
1936 ...	105	85	63	55

North IV registered the highest mortality and the remainder of the South-East and North II the lowest.

The proportion of deaths at ages under 1 year was 51 per cent. compared with 51, 45, 48, 44 and 44 in the preceding five years.

It was shown in the Review for 1934 (Table XXXIX) that when the county boroughs were grouped according to the zone of latitude in which they are situated and the rate of overcrowding, as recorded at 1931 census, the average mortality at ages under 5 during the 14 years 1921–34 increased step by step with the overcrowding rate in the southern towns (50° – 52°), and a similar increase was noticeable amongst towns in the most northerly counties (54° – 55°), and it was concluded that overcrowding or the unsatisfactory social and economic conditions which are responsible for it, are in general more important in their effects on urban mortality from whooping cough than is northerliness of situation in England and Wales. The very large variation of mortality at ages under 2 according to the social class of the parent is shown in Table XXI of this Review.

10. Diphtheria.—The 3,081 deaths in 1936 include 1,534 males and 1,547 females. A female excess is shown also by the standardized death-rates (Table 8), as in each year since 1919 except 1922 and

1931, though the crude death-rate (Table 7) is generally higher for males. For 1936 the crude rates were 78 per million for males and 73 for females, and the standardized rates 109 for males and 110 for females. Classification of multiple cause deaths according to the physician's choice of essential cause rather than by selective rules would reduce the deaths assigned to diphtheria from 3,081 to 3,000.

The history of diphtheria mortality is best expressed by the death-rate from diphtheria and croup at ages under 15 in Table 9, for during last century much diphtheria was evidently returned as croup, and the larger proportional child population in itself tended to produce a higher crude death-rate at all ages. In 1861-65 this rate was 1,422 per million, but fell to 891 in the next quinquennium, and the 5-yearly rates then showed only slight fluctuations until the end of the century, when a decline again set in to 310 in 1921-25. This has been followed by another stationary period, the rate in 1926-30 being 301, in 1931-35, 300 and in 1936, 318. (Table 9.)

The quinquennial death rates from 1906 to 1920 and annual rates in each year since 1921 at different ages are shown in Table XXXVIII, and rates for each separate year since 1901 were given in Table XL of the Review for 1934. These rates show a much greater proportionate decline in infancy and the pre-school ages than in later childhood. The rates of 1936 expressed as percentages of the rates in 1906-10 were 47, 25, 50, 50 and 64 for the first 5 years of life, and 92 at ages 5-10. The mortality amongst infants under 1 year reached the low rate of 12 per 100,000 live births in 1932-35, increasing to 14 in 1936. In the second year of life the 1936 rate was lower than in any previous year and for the third year of life lower rates than in 1936 were registered in 1924-27 and 1931-33. At ages 3-4 mortality rose from 43 per 100,000 living in 1933 to 80 in 1934, and at 4-5 it rose to 75, these being the highest levels since 1921, but by 1936 the rates at these ages had fallen to 53 and 66 respectively.

At ages 5-10 the rates during the seven quinquennial periods from 1901-35 have been 62, 52, 51, 53, 37, 37 and 42. The excessive rate of 61 recorded at this age in 1934 declined to 48 by 1936. At 10-15 there has been no consistent change since 1901, the successive quinquennial rates being 10, 8, 10, 11, 8, 9 and 10 and the 1936 rate being also 10.

There has been a progressive shifting of mortality risks towards the school age, so that whereas 30 years ago the danger at ages 1-5 was double that at 5-10, the rates in terms of that at 5-10 were in 1931-35 only 69 per cent. at 1-2, 98 at 2-3, 133 at 3-4 and 143 at 4-5.

The variation of the mortality of young children in the 2nd year of life with the social class of the father is shown in Table XXI.

Table XXXVII shows that diphtheria mortality was highest in North II and North I, and lowest in the East and South-East. For the country as a whole, outside London, the rate increased regularly with urbanisation, but the London rate was comparatively

low. It seems probable that diphtheria is still much more freely notified in some sections of the population than in others. Thus the average notification rate in the 10 years 1927–36 in Bolton was 48 and the average fatality ratio 77, but in Cardiff a much higher average notification rate of 232 was accompanied by a lower average fatality ratio of 39, this being suggestive of more complete notification in the latter town.

Table XXXVIII.—Diphtheria and Croup Mortality—1906–1936.

Year.	Deaths per 100,000 live births.	Deaths per 100,000 living.							
		Age 0–	1–	2–	3–	4–	5–	10–	15– 25 and up.
1906–10 ..	30	84	90	106	103	52	8	1	1
1911–15 ..	25	69	76	91	91	51	10	1	0
1916–20 ..	24	67	79	93	95	53	11	2	0
1921 ..	23	62	73	96	89	54	13	2	1
1922 ..	25	68	70	78	75	41	11	1	0
1923 ..	16	39	46	51	51	28	7	1	0
1924 ..	15	36	44	49	47	25	5	1	0
1925 ..	17	40	41	50	59	31	6	1	0
1926 ..	18	43	44	48	54	37	6	1	0
1927 ..	17	40	42	47	51	31	7	1	0
1928 ..	21	47	46	49	59	37	8	1	1
1929 ..	22	44	53	58	58	39	10	2	1
1930 ..	19	49	53	58	61	41	12	1	1
1931 ..	16	32	38	51	49	32	9	1	1
1932 ..	12	25	35	44	51	30	7	1	0
1933 ..	12	23	37	43	55	38	9	1	0
1934 ..	12	35	51	80	75	61	13	2	1
1935 ..	12	29	47	63	71	52	13	2	1
1936 ..	14	21	45	53	66	48	10	1	0
Rates per cent. of that at 5–10 years									
1906–10 ..	—	162	173	204	198	100	15	2	1
1911–15 ..	—	135	149	178	178	100	20	2	1
1916–20 ..	—	126	149	175	179	100	21	4	1
1921–25 ..	—	135	146	168	170	100	22	3	1
1926–30 ..	—	119	127	141	154	100	24	3	1
1931–35 ..	—	69	98	133	143	100	24	2	1

Table XXXIX shows the trend, over a series of years, of prevalence and fatality indices in London, each county borough having a population exceeding 150,000 in 1931, and in the residue of each region surrounding these towns. Although local differences in the standard of notification of diphtheria may affect comparison of local rates in a given year, this factor is not likely to affect comparisons

Table XXXIX.—Diphtheria prevalence and fatality rates in Certain Large Towns and Regions, 1928 to 1936.

Notified Cases per 100,000 living.										Deaths per 1,000 Notified Cases.								
										1928.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.
England and Wales	..	..	..	..	..	..	..	..	..	155	159	184	126	108	118	170	160	142
South-East :—	..	..	..	..	..	..	..	..	..	275	268	303	195	188	225	281	225	172
London Admin. County	..	..	..	..	..	..	..	..	..	223	194	169	90	48	91	181	128	76
Croydon C.B.	..	..	..	..	..	..	..	..	..	360	317	255	151	97	77	136	169	97
Portsmouth C.B.	..	..	..	..	..	..	..	..	..	194	214	232	122	119	161	419	444	196
Southampton C.B.	..	..	..	..	..	..	..	..	..	342	265	282	120	105	182	291	285	176
West Ham C.B.	..	..	..	..	..	..	..	..	..	161	156	168	102	65	74	124	108	77
Remainder of South-East	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North I :—	..	..	..	..	..	..	..	..	..	96	95	78	42	55	33	137	236	243
Newcastle-on-Tyne C.B.	..	..	..	..	..	..	..	..	..	104	79	144	90	61	39	82	181	222
Sunderland C.B.	..	..	..	..	..	..	..	..	..	132	121	119	65	49	81	172	259	267
Remainder of North I	..	..	..	..	..	..	..	..	..	225	279	280	361	534	473	333	300	347
North II :—	..	..	..	..	..	..	..	..	..	82	64	80	69	42	63	151	111	98
Kingston-upon-Hull C.B.	..	..	..	..	..	..	..	..	..	97	139	117	82	106	129	288	318	307
Remainder of North II	..	..	..	..	..	..	..	..	..	133	110	207	203	183	216	455	278	166
North III :—	..	..	..	..	..	..	..	..	..	159	146	134	80	79	189	272	338	390
Bradford C.B.	..	..	..	..	..	..	..	..	..	98	99	116	115	136	150	234	208	155
Leeds C.B.	..	..	..	..	..	..	..	..	..	90	67	167	152	172	241	472	288	197
Sheffield C.B.	..	..	..	..	..	..	..	..	..	61	40	45	25	24	60	54	57	39
Remainder of North III	..	..	..	..	..	..	..	..	..	218	267	462	375	384	340	338	314	264
North IV :—	..	..	..	..	..	..	..	..	..	158	120	137	95	140	134	169	174	222
Birkenhead C.B.	..	..	..	..	..	..	..	..	..	173	288	317	257	329	350	414	329	289
Bolton C.B.	..	..	..	..	..	..	..	..	..	99	113	124	98	91	96	155	155	184
Liverpool C.B.	..	..	..	..	..	..	..	..	..	218	238	235	178	117	83	156	165	160
Manchester C.B.	..	..	..	..	..	..	..	..	..	153	289	369	207	134	157	182	153	107
Salford C.B.	..	..	..	..	..	..	..	..	..	162	265	293	114	64	81	108	132	142
Remainder of North IV	..	..	..	..	..	..	..	..	..	111	97	91	75	59	85	104	144	141
Midland I :—	..	..	..	..	..	..	..	..	..	112	126	148	101	64	61	116	137	120
Birmingham C.B.	..	..	..	..	..	..	..	..	..	188	104	83	47	32	140	192	166	104
Bristol C.B.	..	..	..	..	..	..	..	..	..	346	259	255	99	51	56	76	107	144
Coventry C.B.	..	..	..	..	..	..	..	..	..	115	116	155	80	59	58	72	90	91
Stoke-on-Trent C.B.	..	..	..	..	..	..	..	..	..	133	126	107	86	78	69	66	68	53
Remainder of Midland I	..	..	..	..	..	..	..	..	..	217	264	318	191	212	165	186	238	221
Midland II :—	..	..	..	..	..	..	..	..	..	81	113	159	82	66	63	70	72	53
Leicester C.B.	..	..	..	..	..	..	..	..	..	248	328	321	264	221	215	235	158	155
Nottingham C.B.	..	..	..	..	..	..	..	..	..	239	266	290	289	190	172	200	220	194
Remainder of Midland II	..	..	..	..	..	..	..	..	..	163	179	238	163	136	144	215	163	143
East	..	..	..	..	..	..	..	..	..	93	107	234	229	165	153	165	132	176
South-West :—	..	..	..	..	..	..	..	..	..	133	126	107	86	78	69	66	68	53
Plymouth C.B.	..	..	..	..	..	..	..	..	..	217	264	318	191	212	165	186	238	221
Remainder of South-West	..	..	..	..	..	..	..	..	..	81	113	159	82	66	63	70	72	53
Wales I :—	..	..	..	..	..	..	..	..	..	248	328	321	264	221	215	235	158	155
Cardiff C.B.	..	..	..	..	..	..	..	..	..	239	266	290	289	190	172	200	220	194
Swansea C.B.	..	..	..	..	..	..	..	..	..	163	179	238	163	136	144	215	163	143
Remainder of Wales I	..	..	..	..	..	..	..	..	..	93	107	234	229	165	153	165	132	176
Wales II ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

NOTE.—In London, notifications are transferred to the area of residence, but this is not the case in other towns.

NOTE.—Rates in parentheses are founded upon less than 10 deaths.

of the trend of prevalence or fatality in one town with the corresponding trend during the same period in another town. There are consistent differences apparent over periods of years, both as regards prevalence and fatality, between towns of similar size and situation, such as Manchester and Liverpool, or Leeds and Sheffield.

The rate of prevalence, as measured by notified cases, has declined continuously since 1932 in Liverpool and since 1934 in London, West Ham, Leeds, Birkenhead, Salford, Bristol, Leicester and Cardiff, whilst Southampton, Bradford, Stoke-on-Trent, Plymouth and Swansea showed a fall in 1936 after a period of increase. On the other hand Newcastle-upon-Tyne, Sunderland, Sheffield, Manchester, Coventry and Nottingham continued to register increases which had been in progress since 1932 or 1933.

Table 10 shows that the counties, with over 100,000 population, having the highest mortality in 1936 were Bedford (234 per million) and Durham (212). The highest rates among county boroughs (average 100) were those for Kingston-upon-Hull (379) and West Hartlepool (339).

11. Influenza.—The deaths assigned to this cause numbered 6,057, 3,176 of males and 2,881 of females. The resultant crude mortality rate of 148 per million is reduced on standardization, by allowance for the increased age of the population, to 109, lower standardized rates than this having been recorded only in the years 1930 and 1934 (Table 9).

Influenza is sometimes certified as a contributory rather than a primary cause of death, and on the other hand the physician may

Table XL.—Influenza Mortality per million Population during the first 3 and last 9 months of each Year, 1921-36.

—					January–March.	April–December.
1921	..	..	..	..	356	198
1922	..	..	..	..	1,854	133
1923	..	..	..	..	240	214
1924	..	..	..	..	1,322	213
1925	..	..	..	..	783	175
1926	..	..	..	..	298	206
1927	..	..	..	..	1,827	147
1928	..	..	..	..	332	152
1929	..	..	..	..	2,450	173
1930	..	..	..	..	225	94
1931	..	..	..	..	958	167
1932	..	..	..	..	926	133
1933	..	..	..	..	1,995	97
1934	..	..	..	..	271	96
1935	..	..	..	..	285	148
1936	..	..	..	..	288	102

regard it as more important than an associated cause such as cancer to which the selective rules give preference. Classification of multiple cause deaths according to the physicians' order of statement rather than by rules would reduce the total deaths assigned to influenza from 6,057 to 5,739.

Mortality in the March quarter of 1936 was 288 per million, this being a crude rate. As Table XL indicates, mortality in the latter nine months of the year has been subject to much slighter annual fluctuation than that in the first quarter.

The distribution of influenza mortality throughout the country is indicated in Table XLI.

Table XLI.—Influenza ; Mortality. Encephalitis Lethargica and Cerebro-spinal Fever ; Mortality, Prevalence and Fatality, 1936.

	In- fluenza.	Encephalitis Lethargica.			Cerebro-spinal Fever.		
	Deaths per Million Living.	Deaths per Million Living.	Cases per Million Living.	Deaths per 100 Cases Notified	Deaths per Million Living.	Cases per Million Living.	Deaths per 100 Cases Notified
England and Wales..	148	17	7†	255	16	24†	64
South-East	133	10	3	311	12	18	68
Greater London ..	125	10	3	375	14	22	61
Remainder of South- East	145	10	4	243	10	11	87
North.. ..	154	24	9	264	21	35	60
North I	137	24	5	482	15	23	65
„ II	139	15	6	238	15	25	59
„ III	150	19	7	256	18	30	61
„ IV	164	30	12	238	27	45	59
Midland	152	18	8	213	18	28	65
Midland I	167	22	11	202	22	35	62
„ II	123	11	4	270	11	14	77
East	154	16	8	193	5	5	90
South-West	156	14	8	176	8	13	65
Wales.. ..	189	14	3	425	12	15	74
Wales I	174	9	3	340	13	21	61
„ II	227	25	4	567	9	1	600
County boroughs* ..	138	22	9	234	24	40	60
Other urban districts*	157	17	7	238	11	18	61
Rural districts* ..	180	15	5	292	11	11	104
Greater { Admin. Co.	129	13	3	450	17	30	56
London { Outer Ring	121	8	3	300	10	15	71

* Excluding Greater London.

† Including Port Sanitary Districts.

The highest regional rate is that for Wales II, as was the case in 1934 and 1935, and the lowest rate is that of Midland II. Mortality generally was highest in the rural districts, decreasing with urbanisation. In these respects the behaviour of influenza contrasts with

the incidence of the epidemic diseases of childhood which follow an almost constant rule of increase with urbanisation. In 20 of the 26 years, 1911–36, for which comparison is possible, the highest mortality from influenza has been recorded in the rural districts.

Influenza mortality is not much affected by social class except amongst young children (Table XXI). For males aged 20–65 in 1930–32 the standardized mortality ratios in terms of all males taken as 100 were 95, 101, 94, 107, 105 for the 5 social classes I to V. For married women aged 20–65 the standardized ratios in terms of all married women taken as 100 were 102, 101, 97, 100, 104 for classes I to V of the husband.

15. Erysipelas.—Deaths attributed to erysipelas numbered 987, 515 of males and 472 of females, corresponding to standardized death-rates of 21 per million for males and 18 for females. These rates attained their lowest level in 1923, 15 and 14 respectively, and then increased slowly to 25 and 20 in 1930–31, but in 1933 the rates rose sharply to 30 and 25, and again in 1934 to the high levels of 34 and 27, this being followed by a considerable fall in 1935 and further decline in 1936. Erysipelas mortality is highest amongst the unskilled class of males (Class V) as shown by the following standardized mortality ratios at ages 20–65 in 1930–32 :—Classes I–II, 91; Class III, 96; Class IV, 103; Class V, 115.

At ages under 5 the erysipelas death-rate per 100,000 living was 9 in 1896–1900, 8 in 1901–5, 6 in 1906–10, 4 in 1915–20, and 3 in 1923, but then rose to 10 in 1933, followed by a fall to 8 in 1934, 6 in 1935, and 5 in 1936.

The notification rate, which rose from 32 per 100,000 in 1923 to 45 in 1929 and 1930 and then declined to 36 in 1932, reached the high level of 51 in 1934, but fell again to 40 in 1936 (Table 26). It was highest in the English county boroughs (52) and lowest in the Welsh rural districts (21). The mean annual rates of prevalence, as measured by notifications, in each county during the two periods 1921–24 and 1931–34 were compared in Table XLVI of the Review for 1934.

16. Acute Poliomyelitis.—Deaths, including those from acute polioencephalitis, numbered 102, compared with 145 in the preceding year. The standardized death rate was 3 per million for each sex. The cases notified were 530 of poliomyelitis and 53 of polioencephalitis.

The death-rate at ages under 15 was 7 per million. This rate ranged from 9 to 16 in each of the periods 1911–20 and 1921–30, and from 7 to 13 during 1931–35. The distributions of deaths according to age are compared in 1926–30 and in each of the last six years, in Table XLII.

Table XLII.—Acute Poliomyelitis and Polioencephalitis deaths at various ages per cent. of all ages, 1926–1936.

Year.	Rate per million at 0–15.	No. of deaths (all ages).	Percentage at different ages.							
			0–	1–	5–	10–	15–	25–	45 & up.	All ages.
1926–30	12	888	8	32	17	11	18	9	5	100
1931	7	98	21	28	9	12	18	10	2	100
1932	13	178	6	27	20	15	16	11	5	100
1933	13	202	6	26	16	15	17	15	5	100
1934	9	135	4	21	19	16	15	15	10	100
1935	10	145	3	30	17	17	15	12	7	100
1936	7	102	4	26	13	21	17	12	8	100

17. Encephalitis Lethargica.—Deaths attributed to this disease numbered 686 : (332 males and 354 females), yielding a standardized death-rate of 14 per million, the lowest since 1923 (Table 9). On many death certificates this disease is mentioned as a contributory rather than a direct cause of death and the high preference given to it by the selective rules causes the deaths under this heading to considerably exceed those which are properly attributable to it. Classification according to the physician's choice of essential cause would reduce the number of deaths from 686 to 571. The 269 notifications of acute encephalitis lethargica (Table 28) show a decline for the twelfth year in succession, and are considerably less than the deaths, yielding a fatality ratio of 2,550 deaths per 1,000 notifications, compared with 2,195 in 1935, 1,917 in 1934 and 279 in 1924.

Table XLI shows that mortality was highest in North IV whereas in London mortality and prevalence were, as usual, below the general average.

18. Cerebro-spinal Fever (*Meningococcal Meningitis*).—Deaths from this cause numbered 635. Of these 375 were of males and 260 of females, corresponding to standardized rates of 26 and 18 per million.

The male rate was slightly above that of 1935, the increase being at ages under 5 and at 15–25, as Table XLIII shows. The female rates at ages over 15 continued to decline.

Infant mortality from this cause varies with the social class of the parent, as the following rates per 10,000 legitimate births in 1930–32 indicate :—Classes I–II, 2 per 10,000 ; Class III, 3 ; Class IV, 4 ; Class V, 5 per 10,000.

Notifications in 1936 numbered 994 (Table 28). The numbers in the preceding six years were 674, 2,216, 2,136, 1,695, 1,094 and 883. The fatality ratio was 64 per 100 cases, the ratios in the 6 years preceding being 94, 65, 57, 56, 67 and 70. In times of high

prevalence, when attention is directed to the disease, notification statistics probably furnish a more complete record of the total number of persons attacked than at other times.

Prevalence was greatest in February, March and April (Table 27), mortality being highest in March and April (Table 23).

Table XLIII.—Cerebro-spinal Fever, 1911–36: Mortality at Various Ages per Million Living and per cent. of that in 1915–17.

Year.	Males.					Females.				
	All Ages*	0–5	5–15	15–25	25 and up*	All Ages*	0–5	5–15	15–25	25 and up*
Mortality rate per million.										
1915–17†	69·8	148·2	45·3	135·3	35·2	31·6	122·7	36·5	24·8	10·5
1931	54·7	218·7	51·2	54·1	17·5	37·2	172·6	45·8	17·4	9·3
1932	46·4	209·6	36·0	42·6	13·6	31·8	153·0	31·5	16·3	9·5
1933	35·2	172·9	26·7	28·5	8·8	27·3	139·5	27·6	12·9	6·4
1934	28·5	135·3	23·8	22·0	7·8	19·8	107·3	17·9	7·7	4·7
1935	23·4	118·8	18·5	14·2	6·6	18·6	104·6	16·0	8·6	3·3
1936	25·6	133·5	17·0	17·7	6·8	18·4	106·0	16·4	7·3	3·0
Mortality rate per cent. of that in 1915–17.†										
1911–14†	17	43	26	4	5	31	45	24	16	14
1915–17†	100	100	100	100	100	100	100	100	100	100
1918	55	57	54	59	48	55	56	63	49	46
1919	39	64	49	28	24	51	56	52	46	39
1920	27	60	47	10	9	46	56	39	51	25
1921	21	52	28	5	11	36	50	28	28	21
1922	18	44	25	7	5	32	49	23	20	9
1923	13	31	19	3	6	27	32	27	29	11
1924	15	34	21	6	6	24	31	21	16	15
1925	18	44	29	6	4	29	39	26	19	14
1926	19	50	27	5	5	30	45	14	24	19
1927	24	63	30	6	8	34	44	37	19	18
1928	23	60	28	6	10	39	54	30	27	22
1929	33	83	38	14	11	50	71	45	27	18
1930	34	76	52	13	15	58	86	46	25	27
1931	78	148	113	40	50	118	141	125	70	89
1932	66	141	79	31	39	101	125	86	66	90
1933	50	117	59	21	25	86	114	76	52	61
1934	41	91	53	16	22	63	87	49	31	45
1935	34	80	41	10	19	59	85	44	35	31
1936	37	90	38	13	19	58	86	45	29	29

* Standardized. † The rates used for 1911–14 and 1915–17 are mean annual rates for those years.

Table XLI shows a higher death rate in the county boroughs than the rural districts, and in London than in the Outer Ring, and, as in the two preceding years, both mortality and prevalence increased in general from South to North, mortality being highest in North IV, followed by Midland I and North III, and lowest in the East and South-West.

23–32. Tuberculosis.—The deaths assigned to tuberculous affections in the aggregate numbered 28,268—16,166 of males and 12,102 of females—933 less than those so classified in the previous year.

The standardized death-rate resulting from these figures, 657 per million persons (males 744, females 578), is the lowest yet recorded (Table 9), being 30 per million below the previous lowest rate recorded in 1935, the male rate being 30 per million lower and the female rate 32 per million lower than in that year.

Table XLIV.—Mortality from Tuberculosis (All Forms) per Million Population, 1922–24, 1934, 1935 and 1936.

		Males.				Females.				Persons.			
		1922–24	1934	1935	1936	1922–24	1934	1935	1936	1922–24	1934	1935	1936
All Ages	Crude	1,229	899	848	825	945	638	599	570	1,081	763	718	692
	Standardized	1,192	832	774	744	953	657	610	578	1,066	740	687	657
0–	..	1,181	642	539	520	977	555	451	476	1,080	599	496	498
5–	..	372	219	197	198	392	231	193	160	382	225	195	180
10–	..	337	184	151	148	530	232	231	207	433	208	190	177
15–	..	856	603	551	494	1,282	955	857	807	1,070	779	703	649
20–	..	1,568	1,094	993	946	1,523	1,253	1,211	1,164	1,544	1,175	1,104	1,057
25–	..	1,536	1,043	991	922	1,283	982	924	848	1,398	1,012	957	884
35–	..	1,736	1,150	1,129	1,053	1,033	664	630	594	1,359	887	861	807
45–	..	1,740	1,461	1,330	1,353	804	520	471	458	1,253	954	867	869
55–	..	1,505	1,250	1,234	1,281	683	423	428	417	1,073	811	805	819
65–	..	1,032	841	832	790	585	359	350	356	784	575	566	551
75 and up	..	403	391	353	398	353	221	228	252	372	287	276	309

An improvement on the preceding year was recorded, as Table XLIV shows, at ages 0–5, 10–45 and 65–75 for males, and at ages 5–65 for females.

Table XLV.—Mortality from Tuberculosis in 1936, per cent. of that in 1922–24 and 1932–34.

		1922–24 per cent. of 1912–14.		1932–34 per cent. of 1922–24.		1936 per cent. of 1922–24.		1936 per cent. of 1932–34.	
		Males	Females	Males	Females	Males	Females	Males	Females
All Ages	Crude	78	81	77	72	67	60	87	84
	Standardized	77	81	74	73	62	61	85	83
0–	..	57	57	61	62	44	49	72	79
5–	..	65	68	62	59	53	41	85	70
10–	..	75	77	58	50	44	39	76	78
15–	..	91	105	78	80	58	63	74	79
20–	..	104	110	74	86	60	76	81	89
25–	..	85	91	72	80	60	66	84	83
35–	..	79	75	72	70	61	58	85	82
45–	..	73	68	86	68	78	57	90	84
55–	..	68	71	86	67	85	61	99	91
65–	..	75	78	79	66	77	61	96	92
75 and up	..	69	80	89	68	99	71	111	105

In Table XLV the mortality at each age in the year under review is expressed as a percentage of the corresponding mean annual rates in 1922–24 and 1932–34, and the percentage changes during the ten-year intervals from 1912–14 to 1922–24 and from 1922–24 to 1932–34 are also shown. If we use the mean rates of 1912–14, 1922–24 and 1932–34 as measures of the mortalities in 1913, 1923 and 1933 respectively and suppose that during each of the intervals 1913 to 1923, 1923 to 1933, 1933 to 1936, mortality

at a given age was falling by a constant proportion each year, that is to say the mortality rate changed in each year during the interval by a constant proportion of that in the preceding year, the rates of *annual* percentage change necessary to produce the results in Table XLV were as follows :—

		Males.			Females.		
		1913 to 1923.	1923 to 1933.	1933 to 1936.	1913 to 1923.	1923 to 1933.	1933 to 1936.
All ages	..	—2·5	—2·6	—5·5	—2·1	—3·2	—5·9
0—	..	—5·5	—4·8	—10·5	—5·5	—4·7	—7·5
5—	..	—4·2	—4·7	—5·2	—3·8	—5·1	—11·4
10—	..	—2·8	—5·3	—9·0	—2·6	—6·7	—7·9
15—	..	—0·9	—2·5	—9·7	+0·5	—2·2	—7·5
20—	..	+0·4	—3·0	—6·6	+0·9	—1·5	—3·7
25—	..	—1·6	—3·2	—5·8	—0·9	—2·2	—6·2
35—	..	—2·3	—3·2	—5·4	—2·8	—3·5	—6·5
45—	..	—3·1	—1·5	—3·3	—3·8	—3·8	—5·6
55—	..	—3·8	—1·5	—0·3	—3·4	—3·9	—3·2
65—	..	—2·8	—2·3	—1·3	—2·5	—4·1	—2·7
75 and up	..	—3·6	—1·2	+3·5	—2·2	—3·8	+1·5

The crude death rate at all ages for males declined by $2\frac{1}{2}$ per cent. annually during the periods between 1913 and 1933, and in more recent years by $5\frac{1}{2}$ per cent. annually, whilst for females the rate of fall increased from 2 per cent. annually in the first period to 6 per cent. in the third. For children under 10 the annual rates of fall of about 5 per cent. between 1913 and 1933 have increased also in recent years. For children aged 10–15 mortality has fallen at an increasing rate, reaching 9 per cent. annually for boys, and 8 for girls since 1932–34. At ages 15–20 the first period registered no substantial changes but the second period showed an annual fall of about 2 per cent. for each sex, increasing to 7 to 10 per cent. in recent years. At 20–25 a rise in mortality rate occurred between 1913 and 1923, amounting to about one-half per cent. annually for males and 1 per cent. for females, giving place in the next 10 years to an annual fall of about 3 per cent. for males and $1\frac{1}{2}$ per cent. for females, and in recent years to a more rapid fall of 7 and 4 per cent. per annum respectively. The rise or arrested fall of mortality at ages between 15 and 25 from 1913 to 1923 can be attributed to the immediate effects of food shortage in some of the intervening years on young adults.

At ages 25–35, as at 20–25, the rate of decline of female mortality was less rapid than for males between 1913 and 1933, but both have fallen by 6 per cent. annually in more recent years. At 35–55 the female rate has fallen more rapidly than that of males ever since 1912–14. At every age between 5 and 45 the rate of decline was more rapid between 1923 and 1933 than during the preceding 10 years, and at every age up to 55 the annual rate of decline was greater between 1933 and 1936 than during the preceding 10 years. At ages over 55 male mortality has not fallen since 1923 as rapidly as that of females.

The percentage changes in the standardized rate at all ages in successive decades since 1851–60 are shown in Table XLVI; the decennial rate of fall ranged from 14 to 21 per cent. between 1871–80 and 1911–20, but has increased since then to about 30 per cent.

In Table L of the Review for 1935 were given, at separate ages, the rates per million living from tuberculosis of all forms in decennial periods from 1851–60 to 1901–10 and in quinquennial periods from 1911–15 to 1931–35. It was shown that the mortality of children under 5 had fallen by 1931–35 to about one-ninth of the rate in the middle of last century, and of children aged 5–15 to less than one-fifth. At 15–25, male rates had declined to one-quarter and female rates to less than a third, and at 25–35 the rates for each sex had fallen to a quarter of those in 1851–60. At 35–65 male rates had fallen to a third, or almost to a third, and female rates to less than a fifth, whilst at ages over 65 mortality of each sex had declined to a third or less of the 1851–60 levels.

Table XLVI.—Standardized Mortality from Tuberculosis, Respiratory and Non-Respiratory, and Mortality at Ages 0–5, 5–10 and 10–15 from Non-respiratory Tuberculosis, per million living, 1851–1936.
Percentage change during each decade.

			All forms. All ages (stand.)		Respiratory. All ages (stand.)		Non-respiratory.				
							0-5	5-10	10-15	All ages (stand.)	
			Males.	Females.	Males.	Females.	Persons.	Persons.	Persons.	Males.	Females.
Death rates per million living.											
1851-60	..	..	3,477	3,483	2,694	2,854	4,470	640	319	783	629
1861-70	..	..	3,357	3,177	2,612	2,578	4,496	528	270	745	599
1871-80	..	..	3,080	2,701	2,359	2,119	4,460	505	257	721	582
1881-90	..	..	2,656	2,251	1,966	1,672	3,959	555	307	690	579
1891-1900	..	..	2,285	1,780	1,633	1,226	3,517	518	301	652	554
1901-10	..	..	1,891	1,424	1,358	951	2,556	501	303	533	473
1911-20	..	..	1,705	1,210	1,306	868	1,544	444	303	399	342
1921-30	..	..	1,110	887	869	677	836	265	182	241	210
1931	..	..	976	772	780	601	651	211	148	196	171
1932	..	..	913	727	718	562	656	195	135	195	165
1933	..	..	901	707	729	559	563	183	118	172	148
1934	..	..	832	657	669	512	528	183	120	163	145
1935	..	..	774	610	627	486	432	160	103	147	124
1931-35	..	..	879	695	704	544	568	187	125	175	151
1936	..	..	744	578	601	457	429	159	99	143	121
Percentage change from previous decade.											
1861-70	..	..	- 3	- 9	- 3	-10	+ 1	-17	-15	- 5	- 5
1871-80	..	..	- 8	-15	-10	-18	- 1	- 4	- 5	- 3	- 3
1881-90	..	..	-14	-17	-17	-21	-11	+10	+19	- 4	- 1
1891-1900	..	..	-14	-21	-17	-27	-11	- 7	- 2	- 5	- 4
1901-10	..	..	-17	-20	-17	-22	-27	- 3	+ 1	-18	-15
1911-20	..	..	-10	-15	- 4	- 9	-40	-11	0	-25	-28
1921-30	..	..	-35	-27	-33	-22	-46	-40	-40	-40	-39
1936	..	..	-33	-35	-31	-32	-49	-40	-46	-41	-43

Respiratory tuberculosis.—The deaths from tuberculosis of the respiratory system in 1936 numbered 23,801, compared with 24,603 in 1935. This number is 4·8 per cent. of all deaths compared with

6·6 in 1926 and 8·0 in 1916. The trend of the standardized death rates since 1851–60, and the percentage decline in successive decades, is shown in Table XLVI, from which it is seen that 1936 rates registered for each sex a decline of 31 per cent. for males and 32 per cent. for females from the mean annual rates of 1921–30, compared with 41 and 43 per cent. for non-respiratory tuberculosis.

The death rates at separate ages are given in Table XLVIII and the trend of mortality per 100,000 for young adults at ages 15–20, 20–25 and 25–35 is compared in Table XLVII with that of the

Table XLVII.—Phthisis Mortality Rates per 100,000 living at ages 15–20, 20–25, 25–35 and Equivalent Average Rates at all ages under 65; 1851–1936.

	Males.				Females.			
	15–20	20–25	25–35	0–65 Equivalent average rates.*	15–20	20–25	25–35	0–65 Equivalent average rates.*
1851–60 ..	240	405	403	304	352	430	458	263
1861–70 ..	220	389	411	300	312	397	439	277
1871–80 ..	168	311	371	279	241	315	356	231
1881–90 ..	129	234	304	237	181	233	280	184
1891–1900 ..	99	189	237	201	129	159	192	137
1901–10 ..	76	152	197	169	99	123	147	107
1911–20 ..	80	135	168	143	114	134	134	94
1921 ..	71	136	139	115	114	141	121	80
1922 ..	67	146	143	117	106	143	117	78
1923 ..	63	133	140	108	130	129	117	74
1924 ..	62	133	136	109	107	136	115	74
1925 ..	64	117	135	109	107	134	112	72
1921–25 ..	66	133	139	112	109	137	117	76
1926 ..	59	109	126	101	97	131	107	66
1927 ..	61	108	123	102	103	130	112	69
1928 ..	62	105	118	98	101	126	106	64
1929 ..	63	107	119	104	100	134	109	66
1930 ..	61	101	112	95	98	123	105	63
1926–30 ..	61	106	119	100	100	129	108	66
1931 ..	61	108	111	96	98	123	103	63
1932 ..	54	105	101	89	92	121	95	58
1933 ..	50	106	105	90	88	120	97	58
1934 ..	46	95	94	83	81	113	91	53
1935 ..	40	87	89	78	72	110	85	50
1931–35 ..	51	100	100	87	86	118	94	56
1936 ..	36	81	84	76	68	107	78	47

* Rates in a population containing equal numbers at each age.

equivalent average death rate at all ages under 65 by decennial periods up to 1920 and in each separate year since. (For rates at other ages from 1851–60 to 1931–35, see Table L of the Review for 1935.)

During the 60 years between 1851–60 and 1911–20 phthisis mortality at 15–20 declined by 67 per cent. for males and 68 per cent. for females; at 20–25 it fell by 67 per cent. for males and 69 per cent. for females, and at 25–35 by 58 per cent. for males and 71 per cent. for females. The corresponding decline in the equivalent average rates under 65 was 53 per cent. for males and 64 per cent. for females. During the period of about 12 years between 1911–20

and 1926-30 phthisis mortality at 15-20 fell by 24 per cent. for males and 12 for females; at 20-25 it fell by 22 per cent. for males and only 4 per cent. for females, and at 25-35 by 29 per cent. for males and 19 per cent. for females. In the last 8 years, from 1926-30 to 1936, the decline at 15-20 has amounted to 41 per cent. for males and 32 per cent. for females, at 20-25 it has been 24 per cent. for males and 17 per cent. for females, and at 25-35 there has been a fall of 29 per cent. for males and 28 per cent. for females. The corresponding decline since 1926-30 in the equivalent average rates at all ages under 65 has been 24 per cent. for males and 29 per cent. for females.

Stationary periods of arrested fall occurred both for male and female rates at ages 15-20 between the years 1926 and 1931, and it may be significant that the persons concerned had been children between the ages of 0 and 12 during the period of food shortage in 1916-18. Similar stationary or rising periods occurred in the rates at ages 20-25 between the years 1930 and 1933, the persons comprising these groups of the population having been children of ages 3 to 12 during the 1916-18 period.

The arrest which was evident about 1931 was most pronounced in the industrial areas and in the towns where social conditions, as evidenced by a high average of persons per room, were least satisfactory. (*See Table XLII of 1932 Review.*)

The distribution of phthisis mortality in 1936, by regions and by class of area as well as by sex and age is shown in Table XLVIII.

The relation of phthisis mortality to urbanisation is manifested by the contrast between the standardized rates for males of 75 per 100,000 in the county boroughs outside Greater London and 78 in London itself, and that of 41 in the rural districts. For females the effect of urbanisation is not so great, the rates being 53 in the county boroughs, 43 in London, and 38 in the rural districts.

The regional distribution indicates that for males the standardized rate is highest in Greater London, Wales and the North, whilst for females it is much higher in Wales than elsewhere, and below the general average in Greater London. For males this rate is lowest in the South-West and for females in the South-East outside Greater London. Regional differences in mortality are greatest at 15-25, but the effects of urbanisation are most pronounced amongst males over 45, the London rates being more than double those in the rural districts at those ages.

Table XLIX indicates the change since 1931 in phthisis mortality rates at 15-25 and 25-35, and in the equivalent average rates under 65, in each region and class of area. The recent decline in the young male rates has been almost the same in the towns as in the country districts, and has occurred in every region. For young adult females the decline has been greatest in the rural districts.

Table XLVIII.—Tuberculosis of Respiratory System : Mortality per 100,000 Living at different Ages in different Areas, 1936.

	England and Wales.	Greater London.	London Administrative County.	South-East, excluding Greater London.	North.	Midland.	East.	South-West.	Wales.	County Boroughs outside Greater London.	Other Urban Districts outside Greater London.	Rural Districts outside Greater London.
MALES.												
All Ages—												
Crude ..	70	79	94	62	74	68	53	55	73	88	61	47
Standardized..	60	66	78	52	64	58	48	46	65	75	53	41
0— ..	7	7	9	5	9	5	9	2	4	8	7	5
5— ..	3	3	4	2	4	3	2	7	4	4	4	2
15— ..	59	64	71	45	65	54	50	43	73	72	53	41
25— ..	84	97	108	77	81	80	67	76	103	95	77	61
35— ..	98	94	110	94	106	102	90	72	96	125	89	71
45— ..	128	138	178	111	138	127	95	105	121	170	107	79
55— ..	120	147	173	103	128	121	69	85	108	159	91	78
65— ..	72	96	115	58	75	64	46	52	91	95	56	46
75 & up ..	34	53	67	29	28	35	27	18	45	36	35	17
FEMALES.												
All Ages—												
Crude ..	47	46	47	37	48	51	40	40	70	55	45	38
Standardized..	46	43	43	36	47	49	40	37	72	53	44	38
0— ..	7	9	10	3	7	9	5	2	6	8	5	4
5— ..	7	4	5	5	10	6	5	3	9	10	8	4
15— ..	88	81	82	58	97	92	74	59	157	105	87	66
25— ..	78	73	71	71	73	81	75	73	134	84	78	74
35— ..	53	53	49	51	52	58	42	48	65	61	49	46
45— ..	41	39	43	28	40	52	39	43	51	51	36	33
55— ..	37	37	43	27	39	41	24	31	49	48	29	30
65— ..	30	27	31	30	31	26	33	36	36	31	31	30
75 & up ..	19	18	14	21	14	21	30	22	17	19	18	21

Table XLIX.—Phthisis Mortality at certain ages in 1936 per cent. of 1931—Regions and Density aggregates.

				MALES.			FEMALES.		
				15-25.	25-35.	0-65*.	15-25.	25-35.	0-65*.
ENGLAND AND WALES	..			70	76	79	80	76	75
Greater London	..	..		72	82	79	81	78	76
Remainder of South-East	..	..		74	79	85	75	79	73
North	..	..	..	71	72	79	79	72	75
Midland	..	..	..	68	73	79	88	76	78
East	..	..	..	74	71	81	72	67	67
South-West	..	..	..	61	78	78	58	65	70
Wales	..	..	..	65	78	78	89	88	85
County Boroughs	} Outside	Greater	London	69	74	79	81	72	76
Urban Districts				69	73	78	84	79	76
Rural Districts..				70	73	82	69	76	71

* Equivalent average death rate in 1936 per cent. of 1931.

Tuberculosis of Other Organs.—Table XLVI shows that the standardized death-rate from non-respiratory tuberculosis fell very slowly between 1851 and 1900, but between 1891–1900 and 1911–20 the decline amounted to about 20 per cent. in each decade. Since 1911–20 mortality has been falling at the rate of about 40 per cent. in each decade. Amongst children under 5 the rate began to improve about 1880 and has fallen by 40 per cent. or more in each decade since 1901–10; at 5–10 improvement was slight up to 1901–10 but the rate has fallen by 40 per cent. in each decade since 1911–20; at 10–15 no improvement was seen between 1861–70 and 1911–20 but a decline has occurred in each decade since, similar to that at earlier ages.

Effects of Multiple Cause certification on Tuberculosis death rates.—When tuberculosis is entered on a death certificate together with some other cause, precedence is given to the latter if it be one of the acute infections, cancer or other of the diseases set out under Rule 6 (Manual of International List, p. xxx), but over most other causes tuberculosis is preferred in classification, regardless of the order of statement of the causes on the certificate. When respiratory tuberculosis is associated with tuberculosis of some other organ the death is classed to the former. Classification of multiple cause deaths according to the physician's choice as to which was the more essential cause rather than by the operation of these rules would reduce the total deaths classed to tuberculosis by about 3 per cent., as the following comparison for 1936 demonstrates.

—	Deaths classed to the disease in 1936.		
	By selective rules. (Table 6).	By order as stated on certificates.	Percentage change if second method is used.
Tuberculosis, all forms ..	28,268	27,433	— 3
Respiratory system ..	23,801	22,986	— 3
Central nervous system	1,792	1,823	+ 2
Intestines, peritoneum..	682	718	+ 5
Vertebral column ..	388	345	—11
Other bones and joints..	221	196	—11
Skin and subcutaneous tissues.. .. .	44	36	—18
Lymphatic system (except abdominal or bronchial glands) ..	61	45	—26
Genito-urinary system..	292	298	+ 2
Other organs	28	32	+14

Deaths classed to tuberculosis of the bones, cutaneous and lymphatic systems would be reduced by more than 10 per cent.

but tuberculosis of the nervous and urinary systems, intestines and peritoneum would be slightly increased.

34. Syphilis.—Deaths assigned to this cause numbered 1,203, 828 of males and 375 of females. In the six years 1931–36 the deaths classed to congenital syphilis have totalled 412, 365, 296, 261, 239 and 220 and those classed to acquired or unspecified syphilis have numbered 1,034, 938, 1,025, 973, 1,003 and 983. Standardized mortality of males declined from 77 per million in 1871–80 to 58 in 1901–10, increased to 74 in 1917 and 1920, declined again to 39 in 1925, rose to 50 in 1928 and has again fallen to 35 in 1936. Female mortality followed a similar course, from 70 in 1871–80 to 45 in 1901–10, rising to 56 in 1920 and falling to 25 in 1925, followed by a temporary increase to 29 in 1927 and subsequent fall to 16 in 1935 and 1936.

Standardized death-rates for syphilis, tabes dorsalis, general paralysis of the insane and aneurysm from 1911 to 1928 were set out in the Review for 1928 (Table XLIX), and this series is continued in Table L for 1911–20 and each year since.

Table L.—Standardized Mortality per million living from Syphilis and Diseases of Syphilitic Origin, 1911–36.

—	1911 –20.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.
MALES.																	
34. Syphilis	68	64	50	48	42	39	43	45	50	45	45	45	39	39	36	37	35
80. Tabes Dorsalis ..	29	26	29	26	26	25	26	26	25	29	22	20	23	21	17	19	17
83. General Paralysis of Insane	86	59	65	64	55	56	51	54	49	42	40	40	35	31	32	28	25
96. Aneurysm	42	35	36	34	35	34	32	36	37	37	38	38	36	35	36	36	37
Total	225	184	180	172	158	154	152	161	161	153	145	143	133	126	121	120	114
FEMALES.																	
34. Syphilis	48	48	37	30	28	25	26	29	28	26	25	24	23	21	18	16	16
80. Tabes Dorsalis ..	5	5	5	5	4	5	4	5	4	5	4	4	5	4	3	4	3
83. General Paralysis of Insane	17	12	13	12	12	11	11	11	10	10	8	10	9	9	8	9	8
96. Aneurysm	9	8	8	8	7	9	9	9	9	10	10	10	11	13	13	14	16
Total	79	73	63	55	51	50	50	54	51	51	47	48	48	47	42	43	43

Since no significance can be attached to the mention of or omission of mention of syphilis on certificates of death from the last 3 causes, such deaths are all classed to the latter causes and not to syphilis. The combined rate from the 4 causes has declined since 1911–20 by 49 per cent. for males and 46 per cent. for females.

Each of these diseases, when associated on a death certificate with some other cause of death, is given a high preference for statistical classification similar to that given to tuberculosis and influenza, being preferred to most diseases except acute infections and cancer (Rule 6, Manual of International List). Classification of multiple cause deaths according to the physician's choice of the essential cause rather than by selective rules would reduce the total deaths classed to the 4 diseases in 1936 from 4,207 to 3,706, or by

12 per cent., tabes dorsalis being most reduced (23 per cent.) whilst general paralysis is reduced by 10 per cent and aneurysm by 9.

The increase in female mortality from aneurysm contrasts with the favourable trend for the other syphilitic diseases.

44 (1 and 2). **Vaccinia and Sequelæ of Vaccination.**—Three deaths have been assigned to the heading of vaccinia in 1936, namely of a female aged four months certified as “encephalitis due to vaccinia,” of a female aged ten certified as “post-vaccinal encephalitis,” and of a female aged 26 with certified cause of death “cardiac failure following coma due to encephalitis” regarding whom it was further stated on enquiry that the encephalitis was post-vaccinal. Subsequent pathological investigations failed, however, to establish any causal relation with vaccination in the last-mentioned case. Vaccination was mentioned on the death certificate in the first two instances.

One death following vaccination against smallpox has been classed to the group “other sequelæ of vaccination,” that of a male aged four weeks whose death certificate read “staphylococcal septicæmia following infection after vaccination on arm.”

The death of a female aged 13 certified as encephalomyelitis with aural diphtheria as contributory cause (congenital syphilis being added after a pathological report) was stated on inquiry to have occurred 20 days after vaccination against smallpox but in the certifier's view this was not the cause, and the death was assigned to diphtheria in accordance with the selective rules where several diseases are present. Pathological investigations at a later date showed that the vaccination was probably a factor in the causation of the encephalitis.

44 (part of 6). **“Pink Disease.”**—The disease of infancy and early childhood described by the synonyms pink disease, erythroedema, erythroedema polyneuritica, dermato-neuritis or polyneuritis, or acrodynia, was included from 1931 onwards in this group by a decision of the International Conference of 1929, although its ætiology was at that time, and still is, obscure. In 1927 it had been included in the group of other general diseases (No. 69 : 3) in the Annual Reviews, and in the “Nomenclature of Diseases, 1931,” it was likewise placed amongst the group of “diseases due to disorders of nutrition or of metabolism.” The use of the names acrodynia and dermato-neuritis or polyneuritis have become infrequent of recent years whereas deaths attributed to “pink disease” have rapidly increased (*see* Table LVIII of the Review for 1935 for the complete record since 1923, when a single death occurred).

				1923-25	1926-30	1931-35
Acrodynia	..	..	..	4	13	5
Dermato-neutritis	or	dermato-				
polyneuritis	..	..	..	1	8	—
Erythroedema	polyneuritica	(or				
polyneuritis)	..	..	..	4	18	10
Erythroedema	..	..	..	—	35	34
"Pink Disease"	..	..	..	4	48	200
Total				13	122	249

The total deaths in successive years from 1923 to 1935 were 1, 4, 8, 20, 20, 21, 28, 33, 33, 43, 54, 59, 60, and in 1936 there was a further increase to 88, of which 37 were of males and 51 of females, the age distribution being as follows:—47 at ages under 1 year, 40 at 1-5, 1 at 10-15. (The death of a male at age 40-45, shown in Table 21 was classed to this group in error owing to a misreading of "Pick's disease," and the total of 38 males in Table 6 should be corrected to 37.)

45-53. Cancer.—The deaths ascribed to cancer during 1936 numbered 66,354—31,590 of males and 34,764 of females. For both sexes these numbers are the highest yet recorded.

Of these deaths 58,686 were referred to carcinoma, 2,718 to sarcoma, and 4,950 to "cancer" not otherwise defined. These are the largest numbers yet recorded for carcinoma, but not for sarcoma, which of late years has accounted for a somewhat smaller proportion, now 41 per 1,000, of the total cancer deaths than heretofore. The number in the undefined group continues to fall year by year, being now 75 per 1,000.

The standardized death-rate for males in 1936 amounts to 1,068 per million, and that for females to 969. The male rate is the highest yet recorded, the rates in the preceding 5 years having been 1,034, 1,052, 1,035, 1,046, 1,058. In 1928 the increase in female mortality was arrested and the rate decreased each year from the maximal level of 991 to 966 in 1932, and has fluctuated about that value since. Table XLI,* in the 1927 volume, shows that the standardized rate for males first exceeded that for females in 1924, and since that date the excess has been maintained, increasing to 99 per million in 1935 and 1936.

Table 9 shows that the standardized rate in the population regardless of sex, which averaged 998 in 1926-30 and 1,000 in 1931-35, rose to 1,010 in 1936, the highest level yet reached. The crude rate has continued to increase steadily, from 1,362 in 1926 to 1,625 in 1936, owing to the increasing proportion of persons of advanced age

* This table gives standardized death-rates from Cancer by Sex for each year 1851-1927.

in the population (Table 7). Owing to the greater average age of the female population the crude death rate for females continues to exceed that for males, to the extent of 24 per million living in 1936, compared with 106 ten years earlier.

The necessity for taking into account the differing age distributions of populations when comparing cancer death rates may be seen by applying the England and Wales rates in 1931–35 at ages 0–, 25–, 35–, 45–, 55– and 65 upwards for each sex to the census populations of India and of Bombay in 1931, and thus calculating the crude cancer death rates which would be expected if those populations suffered the same cancer mortality, age by age, as in England and Wales. The expected death rate would be 661 per million in India, and 606 in Bombay, compared with the 1931–35 rate of 1,534 in England and Wales, that is to say the differences in average age of the populations would suffice to account for a rate in Bombay only two-fifths of that in England and Wales. The combined effects of the age factor and of less complete recognition of cancer as a cause of death need to be carefully evaluated before valid conclusions can be drawn that the chances of dying from cancer are less in one country than in another.

The mortality from cancer as a whole in 1936 is compared by sex and age in Table LI for England and Wales, with record of the degree of difference in sex mortality at the various ages.

At ages from 25 years up to 55 the female exceeds the male rate but from 55 years to the end of life the male rates are in excess. This female excess in middle age, greatest at 35–45, is associated with, and largely explained by, the special frequency at this age of cancer of the uterus and of the female breast, which together account for a larger proportion of the total deaths of women from cancer at each age between 25 and 65 than at all ages jointly.

Table LI.—Mortality from Cancer (All Sites), 1936.

	Mortality per Million.			Sex Ratio.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
All Ages { Crude ...	1,612	1,636	1,625	992	1,007	1,000
{ Standardized	1,068	969	1,010	1,057	959	1,000
0—	51	36	44	1,159	818	1,000
5—	21	15	18	1,167	833	1,000
15—	50	43	46	1,087	935	1,000
25—	137	168	153	895	1,098	1,000
35—	452	734	603	750	1,217	1,000
45—	1,632	2,045	1,855	880	1,102	1,000
55—	4,712	4,019	4,342	1,085	925	1,000
65—	10,179	7,508	8,709	1,169	862	1,000
75—	15,190	12,157	13,332	1,139	912	1,000

The percentage share of the breast and uterus in the total cancer mortality of females, in 1936, was :—

All		ages.	0—	25—	35—	45—	55—	65—	75 up.
Breast	..	20·4	0·8	19·3	25·8	27·3	22·2	16·4	17·2
Uterus	..	12·5	3·4	15·4	23·1	19·0	13·7	9·7	6·6

The mortality attributed to sarcoma, carcinoma and cancer undefined is distinguished in Table LII, other details of the deaths being shown in Tables LIV and LV. The rates for cancer undefined are lower than in 1931–35 at every age over 35, indicating increased precision in the statement of the type of cancer. Sarcoma rates are appreciably lower at 35–75 for males, and at 0–5 and 35–65 for females. Carcinoma rates show an increase at all ages over 15 for males, and at 15–55 and 65 and over for females.

Table LII also shows the trend of cancer mortality by sex and age since 1901–10.

TABLE LII.—Cancer Mortality in 1911–20, 1921–30, 1935 and 1936 per cent. of that in 1901–10. Sarcoma, Carcinoma and Undefined: rates per million in 1931–35 and 1936.

	Mortality per cent. of the rate in 1901–10.*				Mortality per million living.					
					Sarcoma.		Carcinoma.		Cancer undefined.	
	1911–20	1921–30	1935	1936	1931–35	1936	1931–35	1936	1931–35	1936
MALES.										
All ages—										
Crude	128	167	204	209	78	79	1,296	1,410	136	124
Standardized ..	114	128	135	136	63	63	889	923	93	82
0—	96	100	109	125	24	26	2	2	1	2
15—	107	112	110	122	30	31	13	17	3	2
25—	101	106	111	126	36	46	76	83	7	8
35—	102	101	113	109	63	56	344	364	33	32
45—	108	105	105	105	125	108	1,369	1,399	134	125
55—	114	121	121	121	202	194	4,080	4,177	411	341
65—	120	143	153	152	269	254	8,913	9,130	962	795
75 and up ..	124	162	185	193	284	312	12,533	13,580	1,388	1,297
FEMALES.										
All ages—										
Crude	114	135	155	159	58	55	1,364	1,462	136	119
Standardized ..	102	104	102	103	44	41	842	858	83	70
0—	100	111	126	116	19	17	2	2	1	3
15—	103	106	121	130	21	21	15	18	3	4
25—	92	94	94	99	24	24	120	134	11	10
35—	93	90	85	87	41	36	635	650	55	48
45—	98	92	87	88	88	69	1,820	1,833	173	143
55—	99	96	92	91	137	127	3,618	3,620	352	272
65—	107	116	113	113	181	187	6,682	6,762	682	559
75 and up ..	116	143	147	154	199	197	10,410	10,979	1,094	981

* The rates per 100,000 at 1901–10, 1911–20, 1921–30 and 1931 were given in Table XLII of the Review for 1931. The percentage ratios in this table are based upon rates per million, that is to say, upon an additional significant figure, and therefore differ slightly from those given in previous years.

The crude death-rate at all ages for males in 1936 is 109 per cent. and the female rate 59 per cent. higher than the respective rates in 1901-10, but if standardized rates are compared these excesses are reduced to 36 and 3 per cent. respectively. These great differences in the rate of increase as shown by comparing crude and standardized rates again emphasize the desirability of restricting comparison to rates corrected for the changing age of the population. The standardized figures take into account the rapidly increasing proportion of elderly persons in the population and attempt to correct, though imperfectly owing to the wide divergence of the age constitution of the present population from that of the 1901 standard, the exaggerated impression conveyed when crude rates are compared. The equivalent average death-rates (E.D.R.) for each sex at ages under 65, that is to say the rates which would occur in populations consisting of equal numbers at each year of age up to 65, together with the rates at 65-75 and 75 and over, provide a more complete picture of cancer mortality, unaffected by differences in age constitution between the populations which have to be compared. These equivalent average death-rates are readily calculated by finding the arithmetic mean of the death-rates at the 13 quinquennial age groups between 0 and 65. (*See p. 2.*)

The recent trend of the sex death-rates at the several age-groups over 25 and of the equivalent average rates is indicated below, the rates per million being expressed as percentages of the 1901-10 rate in each instance.

Males	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
25—	108	113	111	102	107	106	106	116	111	126
35—	102	103	104	107	102	102	109	105	113	109
45—	104	105	102	106	106	101	106	107	105	105
55—	120	121	119	116	119	123	118	120	121	121
65—	149	149	149	152	153	155	148	151	153	152
75 and up	167	172	181	178	173	179	183	180	185	193
E.D.R. 0-65	114	116	113	112	114	116	114	115	116	116
Females										
25—	95	98	93	90	89	94	89	91	94	99
35—	90	93	87	88	87	86	86	87	85	87
45—	90	93	89	88	92	90	89	90	87	88
55—	94	94	93	94	93	93	94	94	92	91
65—	116	118	122	117	114	112	114	114	113	113
75 and up	148	152	156	157	149	148	148	149	147	154
E.D.R. 0-65	93	94	92	92	92	92	92	92	90	90

Comparison of the last few years with the preceding years indicates that for males the equivalent rate at ages under 65 has not shown any consistent change in the last ten years, and for females, after a decline to 92 per cent. of the 1901-10 level by 1929, it remained almost stationary till 1934, falling again to 90 per cent. in the last 2 years. At ages over 65 the average male rates in the last triennium were above those in the preceding one, whilst the female rates at these ages remained almost stationary from 1931 to 1935, but at ages over 75 the rate increased in 1936.

Cancer mortality is analysed according to sex, age, region and class of area in Table LIII. The standardized rate for each sex declines, as noticed in previous years, from a maximum in the county boroughs to a minimum in the rural districts, the range according to urbanization, as thus measured, being much greater for males, 116 to 90 per 100,000, than for females, 103 to 90 per 100,000. The average standardized male rates in the five years 1931-35 were 122 in London, 114 in the county boroughs, 101 in the urban districts and 89 in the rural districts, the corresponding averages for females being 100, 101, 97 and 92.

Apart from Greater London, the North and Wales give the highest standardized mortality for each sex and the regional dispersion is greater for males than for females.

Table LIII.—Cancer (All Sites) : Mortality per 100,000 Living in different Areas and at different Ages, 1936.

	England and Wales.	Greater London.	London Admin. County.	South-East, exclu- ding Greater London.	North.	Midland.	East.	South-West.	Wales.	County Boroughs outside Greater London.	Other Urban Dis- tricts outside Greater London.	Rural Districts outside Greater London.
MALES.												
All Ages—												
Crude ..	161	165	190	170	160	148	171	173	155	166	157	155
Standardized ..	107	116	129	98	112	101	95	95	105	116	102	90
0— ..	5	7	10	3	4	6	3	10	8	5	5	5
5— ..	2	2	2	3	2	2	2	5	4	2	2	3
15— ..	5	6	5	4	4	7	5	5	3	5	5	4
25— ..	14	15	16	11	15	15	11	12	11	15	13	12
35— ..	45	48	52	42	48	40	35	46	49	52	42	36
45— ..	163	200	217	140	166	142	141	144	170	178	144	128
55— ..	471	503	562	429	508	445	400	383	479	522	454	384
65— ..	1,018	1,066	1,214	962	1,124	972	887	831	951	1,139	1,004	840
75 and up ..	1,519	1,676	1,783	1,444	1,480	1,460	1,533	1,567	1,532	1,555	1,463	1,438
FEMALES.												
All Ages—												
Crude ..	164	155	167	183	159	157	184	194	157	164	169	164
Standardized ..	97	94	99	92	101	97	97	93	101	103	97	90
0— ..	4	4	4	4	3	2	3	3	6	4	3	4
5— ..	2	2	2	1	1	2	2	1	1	1	1	1
15— ..	4	3	4	4	5	4	6	4	4	4	4	5
25— ..	17	19	20	15	17	13	19	21	15	17	15	17
35— ..	73	69	73	69	77	77	84	70	68	86	69	63
45— ..	205	196	206	187	220	201	192	200	216	218	204	190
55— ..	402	379	385	375	418	413	416	397	428	423	416	368
65— ..	751	743	796	718	786	756	696	667	830	792	757	686
75 and up ..	1,216	1,182	1,258	1,241	1,260	1,171	1,213	1,202	1,218	1,251	1,247	1,159

Cancer by Site.—The parts of the body affected by fatal cancer in 1936 are shown in Tables LIV and LV in greater detail than that provided by the international classification, six out of its nine headings (Nos. 45-53) being sub-divided. Fuller details with regard to cancer of the uterus and of the skin than those shown in the Table are also available. The cancer mortality distribution

is shown by sex, age and site as well as by the nature of the growth to which the deaths were attributed, under the headings carcinoma, sarcoma and "cancer" not otherwise defined. Continuing the practice of many years past, every practicable effort is made, with

Table LIV.—Sites and Forms of Fatal Cancer by Sex and Age, 1936.

—		All Ages.	0—	5—	15—	25—	35—	40—	45—	50—	55—	60—	65—	70—	75—	80—	85—
DEATHS OF MALES.																	
All Sites		31,590	73	67	164	454	457	762	1,356	2,443	3,850	5,195	5,826	5,300	3,574	1,561	508
Carcinoma		27,620	4	6	54	274	351	631	1,153	2,105	3,395	4,623	5,205	4,774	3,193	1,379	473
Sarcoma		1,542	64	55	102	152	68	83	102	149	177	196	179	99	81	32	3
Cancer, N.S. ..		2,428	5	6	8	28	38	48	101	189	278	376	442	427	300	150	32
45	Lip	260	—	—	1	—	—	1	5	3	21	22	50	55	55	33	14
	Tongue	979	—	—	1	2	3	7	18	63	111	206	223	184	105	46	10
	Mouth	310	—	—	—	—	2	2	8	14	27	58	76	60	44	13	6
	Tonsil	282	1	1	2	4	4	2	8	23	42	54	60	36	26	14	5
	Jaw	402	1	—	2	1	3	6	16	31	51	76	75	66	41	26	7
	Pharynx	388	—	1	5	4	—	3	17	18	45	80	88	74	38	7	8
	Others (1) ..	226	—	—	—	4	—	1	4	12	20	53	35	39	28	24	6
Total		2,847	2	2	11	15	12	22	76	164	317	549	607	514	337	163	56
46	Œsophagus	1,745	—	—	1	4	12	25	45	98	237	331	409	297	195	78	13
	Stomach	7,070	—	—	8	78	121	222	377	645	932	1,191	1,284	1,129	736	276	71
	Small intestine..	107	—	—	1	1	2	7	11	10	12	18	18	9	11	4	3
	Cæcum	296	—	1	1	7	6	8	12	25	33	43	52	56	34	14	4
	Hepatic flexure..	44	—	—	—	2	3	1	1	4	7	8	7	5	3	3	—
	Splenic flexure ..	97	—	—	—	3	1	2	5	3	13	12	20	17	15	3	3
	Sigmoid flexure ..	768	—	—	1	8	8	15	26	42	76	136	144	148	106	44	14
	Large intestine (colon)	2,713	—	—	4	29	24	48	69	150	271	421	514	564	384	179	56
	Rectum (excluding anus)	3,303	—	—	6	36	33	53	78	229	368	543	662	681	409	148	57
	Liver	1,145	1	2	2	10	14	16	51	90	134	166	221	204	145	66	23
	Gall bladder	286	—	—	—	2	1	4	6	17	32	46	59	49	39	25	6
	Pancreas	1,078	—	—	—	16	9	26	53	88	143	180	189	187	113	58	16
	Others (2)	447	8	2	5	13	14	13	21	23	52	56	60	72	67	35	6
Total		19,099	9	5	29	209	248	440	755	1,424	2,310	3,151	3,639	3,418	2,257	933	272
47	Larynx	911	—	—	1	1	2	9	28	73	132	203	206	130	89	29	8
	Lung (3)	2,611	2	3	9	47	85	136	279	397	498	464	357	213	86	32	3
	Others (4)	222	—	1	4	13	9	8	13	21	43	35	35	23	13	2	2
Total		3,744	2	4	14	61	96	153	320	491	673	702	598	366	188	63	13
50 Breast		79	—	—	—	1	—	3	6	10	6	12	9	10	11	9	2
51	Kidney, Suprarenal ..	377	35	10	4	8	13	24	23	41	51	56	60	32	14	6	—
	Bladder, Urethra, Ureter	989	1	—	2	6	7	21	33	71	108	169	169	172	149	61	20
	Prostate	1,915	—	—	1	1	3	5	14	44	112	255	413	482	352	170	63
	Testis	151	2	1	18	48	18	11	9	6	9	9	8	6	4	1	1
	Penis	201	—	—	—	—	2	5	4	13	25	27	22	44	36	20	3
Scrotum		46	—	—	—	—	—	—	2	6	5	8	11	6	3	2	3
Total		3,679	38	11	25	63	43	66	85	181	310	524	683	742	558	260	90
52 Skin		661	1	1	3	10	6	10	25	31	51	59	82	112	118	88	64
53	Brain, Meninges ..	197	7	19	13	16	17	15	22	37	29	12	7	2	—	1	—
	Thyroid	70	1	—	1	1	1	1	7	7	10	14	11	11	5	—	—
	Bones (jaw excepted) ..	506	8	13	48	39	14	27	27	46	51	63	69	41	40	18	2
	Others (5) and unspecified	708	5	12	20	39	20	25	33	52	93	109	121	84	60	26	9
Total		1,481	21	44	82	95	52	68	89	142	183	198	208	138	105	45	11

(1) Includes Palate, Cheek (internal surface), Salivary Glands, Gums.

(2) " Intestine undefined, Peritoneum, Omentum, Mesentery, Anus.

(3) " Pleura.

(4) Mediastinum.

(5) Includes Lymphatic Glands, Abdomen, Eye, Muscle, etc.

Table LIV.—continued.

				All Ages.	0-	5-	15-	25-	35-	40-	45-	50-	55-	60-	65-	70-	75-	80-	85-
DEATHS OF FEMALES.																			
All Sites				34,764	50	47	140	586	804	1,481	2,325	3,277	4,139	4,724	5,163	4,887	3,972	2,123	1046
Carcinoma				31,066	5	6	58	468	712	1,312	2,074	2,947	3,717	4,266	4,658	4,394	3,615	1,901	933
Sarcoma				1,176	40	34	70	84	39	73	90	99	137	144	152	98	59	35	22
Cancer, N.S.				2,522	5	7	12	34	53	96	161	231	285	314	353	395	298	187	91
45	Lip			22	—	—	—	—	—	—	—	—	1	1	9	1	3	3	4
	Tongue			150	—	—	—	1	2	1	9	16	16	19	33	24	18	10	1
	Mouth			57	—	—	—	2	1	1	1	5	9	7	13	6	9	2	1
	Tonsil			50	—	—	—	1	2	2	2	5	7	4	11	8	2	3	3
	Jaw			205	1	1	1	2	6	5	13	17	15	23	34	35	30	16	6
	Pharynx			113	—	—	1	2	1	2	15	16	23	15	20	12	4	1	1
	Others (1)			40	—	—	—	—	—	2	2	3	4	2	9	9	3	3	3
Total				637	1	1	2	8	12	13	42	62	75	71	129	95	69	38	19
46	Æsophagus			748	—	—	—	6	12	18	45	55	100	116	125	112	86	45	28
	Stomach			5,717	—	3	8	54	94	143	228	390	556	778	1,044	1,020	837	391	171
	Small intestine			98	—	—	1	—	5	2	5	7	9	15	14	16	9	9	6
	Cæcum			392	—	—	1	11	9	7	13	22	39	41	70	60	70	33	16
	Hepatic flexure			67	—	—	—	1	—	1	1	5	8	6	10	11	12	7	5
	Splenic flexure			100	—	—	—	1	4	3	3	9	8	13	13	13	20	8	5
	Sigmoid flexure			760	—	—	1	5	20	25	44	63	82	105	116	125	112	42	20
	Large intestine (colon)			3,297	—	—	8	47	48	66	131	182	276	408	472	608	591	316	144
	Rectum (excluding anus)			2,083	—	—	5	34	39	58	94	157	254	266	337	347	294	140	58
	Liver			1,242	3	2	2	14	14	36	46	85	120	144	218	209	200	100	49
	Gall bladder			611	—	—	—	—	3	8	23	38	75	97	97	100	84	52	34
	Pancreas			974	—	—	4	8	10	16	47	83	119	153	156	172	125	60	21
	Others (2)			705	5	1	7	9	12	22	30	43	73	112	108	109	90	61	23
Total				16,794	8	6	37	190	270	405	710	1,139	1,719	2,254	2,780	2,902	2,530	1,264	580
47	Larynx			293	—	—	1	5	10	13	29	39	42	46	37	31	20	15	5
	Lung (3)			821	—	1	4	21	28	47	70	106	119	134	113	102	41	27	8
	Others (4)			117	—	—	1	5	5	6	3	9	19	19	17	11	13	6	3
Total				1,231	—	1	6	31	43	66	102	154	180	199	167	144	74	48	16
48 Uterus				4,348	1	—	7	90	166	362	463	601	651	564	549	421	277	151	45
49	Ovary and Fallopian Tube			1,713	—	4	19	61	68	122	182	248	247	256	230	147	78	32	19
	Vulva and Vagina			438	—	—	1	7	4	11	14	29	43	55	77	76	65	35	21
	Others			2	—	—	—	—	—	—	—	1	—	—	1	—	—	—	—
Total				2,153	—	4	20	68	72	133	196	278	290	311	308	223	143	67	40
50 Breast				7,079	1	—	1	113	187	403	676	853	957	1,014	884	765	631	357	237
52 Skin				497	1	1	4	6	4	12	21	25	35	29	45	83	66	93	72
53	Brain, Meninges			158	4	9	12	20	8	13	20	19	17	16	12	3	2	2	1
	Thyroid			200	—	—	1	2	4	6	11	16	23	35	29	34	17	18	4
	Kidney, suprarenal			302	18	5	5	8	8	12	15	29	31	40	57	31	26	15	2
	Bladder, Urethra			474	—	—	—	2	3	8	17	33	61	69	74	79	82	34	12
	Bones (jaw excepted)			425	6	16	30	26	10	23	27	40	50	57	63	37	20	11	9
Others (5) and unspecified				466	10	4	15	22	17	25	25	28	50	65	66	70	35	25	9
Total				2,025	38	34	63	80	50	87	115	165	232	282	301	254	182	105	37

(1) Includes Palate, Cheek (internal surface), Salivary Glands, Gums.

(2) " Intestine undefined, Peritoneum, Omentum, Mesentery, Anus.

(3) " Pleura.

(4) Mediastinum.

(5) Includes Lymphatic Glands, Abdomen, Eye, Muscle, etc.

Table LV.—Forms of Fatal Cancer of each Site—1936.

				MALES.						FEMALES.					
				Number of Deaths.			Percentage of all Cancers.			Number of Deaths.			Percentage of all Cancers.		
				Carcinoma.	Sarcoma.	"Cancer" not otherwise defined.	Carcinoma.	Sarcoma.	"Cancer" not otherwise defined.	Carcinoma.	Sarcoma.	"Cancer" not otherwise defined.	Carcinoma.	Sarcoma.	"Cancer" not otherwise defined.
All Sites.. ..				27,620	1,542	2,428	87	5	8	31,066	1,176	2,522	90	3	7
45	Lip			255	—	5	98	—	2	22	—	—	100	—	—
	Tongue			927	1	51	95	0	5	138	3	9	92	2	6
	Mouth			297	1	12	96	0	4	51	2	4	89	4	7
	Tonsil			240	23	19	85	8	7	38	7	5	76	14	10
	Jaw			312	65	25	78	16	6	142	51	12	69	25	6
	Pharynx.. ..			354	9	25	91	2	7	101	6	6	90	5	5
	Others			213	4	9	94	2	4	31	3	6	78	7	15
Total				2,598	103	146	91	4	5	523	72	42	82	11	7
46	Esophagus			1,626	2	117	93	0	7	683	—	65	91	—	9
	Stomach			6,595	6	469	93	0	7	5,359	6	352	94	0	6
	Small intestine			85	11	11	80	10	10	82	5	11	84	5	11
	Cæcum			274	1	21	93	0	7	365	1	26	93	0	7
	Hepatic flexure			41	—	3	93	—	7	64	—	3	96	—	4
	Splenic flexure			93	—	4	96	—	4	98	—	2	98	—	2
	Sigmoid flexure.. ..			726	—	42	95	—	5	716	3	41	94	0	6
	Large intestine (colon)			2,548	4	161	94	0	6	3,099	2	196	94	0	6
	Rectum (excluding anus)			3,093	1	209	94	0	6	1,962	—	121	94	—	6
	Liver			985	16	144	86	1	13	1,100	11	131	88	1	11
	Gall bladder			251	—	35	88	—	12	559	—	52	91	—	9
	Pancreas			998	1	79	93	0	7	906	3	65	93	0	7
	Others			317	63	67	71	14	15	542	69	94	77	10	13
Total				17,632	105	1,362	92	1	7	15,535	100	1,159	93	0	7
47	Larynx			864	—	47	95	—	5	276	1	16	94	0	6
	Lung			2,281	89	241	88	3	9	710	28	83	87	3	10
	Others			105	49	68	47	22	31	58	27	32	50	23	27
Total				3,250	138	356	87	4	9	1,044	56	131	85	4	11
48 Uterus				—	—	—	—	—	—	4,000	61	287	92	1	7
49	Ovary			—	—	—	—	—	—	1,475	26	212	86	2	12
	Vulva			—	—	—	—	—	—	415	3	20	94	1	5
	Others			—	—	—	—	—	—	—	—	2	—	—	100
Total				—	—	—	—	—	—	1,890	29	234	88	1	11
50 Breast				72	4	3	91	5	4	6,627	28	424	94	0	6
51	Kidney, suprarenal ..			153	183	40	41	49	10	—	—	—	—	—	—
	Bladder, urethra, ureter			912	9	69	92	1	7	—	—	—	—	—	—
	Prostate			1,671	9	235	88	0	12	—	—	—	—	—	—
	Testis			79	53	19	52	35	13	—	—	—	—	—	—
	Penis			191	—	10	95	—	5	—	—	—	—	—	—
Scrotum.. ..				42	—	4	91	—	9	—	—	—	—	—	—
Total				3,048	254	377	83	7	10	—	—	—	—	—	—
52 Skin				578	64	19	87	10	3	420	60	17	85	12	3
53	Brain, meninges ..			20	125	52	10	64	26	20	103	35	13	65	22
	Thyroid			63	4	3	90	6	4	178	2	20	89	1	10
	Kidney, suprarenal ..			—	—	—	—	—	—	112	150	40	37	50	13
	Bladder, urethra, ureter			—	—	—	—	—	—	422	4	48	89	1	10
	Bones (jaw excepted) ..			61	420	25	12	83	5	77	322	26	18	76	6
	Others			298	325	85	42	46	12	218	189	59	46	41	13
Total				442	874	165	30	59	11	1,027	770	228	51	38	11

the co-operation of certifying practitioners, to assign the deaths to the organs primarily affected, in order to obtain as true indications as possible of the incidence of the disease. It is well recognized, however, that for certain organs, especially the liver and lung, commonly affected secondarily to such a degree that the symptoms dominate any that may arise from the primarily affected organ, ascertainment of the latter may prove impracticable. Such exceptions are becoming more rare, due no doubt to improvement in diagnostic methods, an encouraging sign justifying the inclusion, in the notes to certifying medical practitioners which accompanies the book of death certificates, of the request that "the seat of primary occurrence should be returned in all cases where known."

The distribution of cancers of each individual site, according to the nature of the growth, is given in Table LV. The percentage of cancers with nature undefined is, amongst the organs distinguished, highest for the brain, liver, testis, prostate, ovary, small intestine and kidney. The percentage of all cancers defined as sarcoma ranges from 80 for the bones, 64 for the brain, 49 for kidney or suprarenal and 35 for the testis to 1 per cent. or less for the digestive tract, uterus and urinary organs other than the kidney.

The facts as to cancer mortality distribution by sex, age and site contained in Table LIV are summarized for each site in Table LVI, which compares standardized rates in 1936 with the rates for other recent periods for the same sex and site. In this table the tendency to increase of mortality merely in consequence of increase in the proportion of persons at risk falling within those ages at which cancer chiefly occurs, as well as the tendency to female excess for the same reason, has been allowed for by standardization, so that all the rates quoted may be compared with one another.

The chief increases in 1936 over the previous year are, for males—intestine 8·2 per million, lung 7·9, bones and skin 2·1, pancreas 1·6 and stomach 1·1, and for females—breast 4·7, ovary and Fallopian tube 3·5, pancreas 1·6, larynx and lung 1·4 and bladder 1·2.

The sites showing an increase in standardized mortality from 1921–30 to 1936 are, for males, the lung (259 per cent. increase), breast (56), pancreas (37), prostate (33), kidney and suprarenal (25), testis (17), intestine (16), bones (15), bladder (9), gall bladder (9), stomach (8), penis (5), rectum (5), pharynx (2), and for females, the lung (146 per cent. increase), ovary and Fallopian tube (43), pancreas (35), larynx (15), œsophagus (12), mouth, tonsil, etc. (11), pharynx (10), kidney and suprarenal (9), bones (8), intestine and breast (7), bladder (6) and tongue (5). The standardized rates for the quinquennium 1931–35 for each site were given in Table LXV of the Review for 1935, as were also the death rates at separate ages in 1911–20, 1921–30 and 1931–35.

Table LVI.—Cancer Mortality: Rates per Million Population (Standardized) for the more important Sites for each Sex 1901–10, 1911–20, 1921–30, 1931, 1932, 1933, 1934, 1935 and 1936.

—			Males. Females.		Males. Females.		Males. Females.		Males. Females.		Males. Females.	
			All Sites.		Lip.		Tongue.		Mouth and Tonsil, etc.*		Jaw.	
1901–10	..	..	784	942	12.8	0.8	43.1	4.4	?	?	22.6	6.9
1911–20	..	..	897	959	12.6	0.7	50.8	4.3	23.5	3.0	25.1	7.2
1921–30	..	..	1,000	980	11.4	0.7	45.9	3.8	28.2	3.6	20.7	6.3
1931	..	..	1,034	974	10.7	0.5	38.1	3.6	29.4	3.5	16.5	5.1
1932	..	..	1,052	966	10.3	0.6	37.6	3.4	29.4	3.7	16.6	5.2
1933	..	..	1,035	973	8.7	0.7	35.7	3.6	26.4	3.6	15.2	4.8
1934	..	..	1,046	974	10.5	0.8	37.4	3.7	26.7	3.3	14.4	5.3
1935	..	..	1,058	959	10.2	0.4	34.7	3.3	27.6	3.7	13.6	4.6
1936	..	..	1,068	969	8.7	0.5	31.8	4.0	27.0	4.0	13.4	5.6
			Pharynx.		Oesophagus.		Stomach.		Liver.		Gall-bladder.	
1901–10	..	..	?	?	51.2	14.6	167.2	133.0	?	?	?	?
1911–20	..	..	10.8	3.0	60.6	16.5	186.4	139.0	87.1	98.0	6.0	11.6
1921–30	..	..	12.6	3.0	64.1	18.0	220.2	154.2	60.7	60.3	8.7	16.4
1931	..	..	13.0	3.1	62.8	18.7	231.3	155.5	47.0	42.7	9.2	16.9
1932	..	..	14.7	3.4	62.5	19.5	233.3	153.8	45.7	38.9	10.8	16.9
1933	..	..	12.8	3.4	57.8	18.3	229.2	156.7	45.5	36.8	9.6	16.5
1934	..	..	13.9	2.8	59.4	19.4	230.3	157.1	40.6	34.3	8.5	17.0
1935	..	..	13.6	3.4	59.2	19.3	236.5	152.8	40.3	32.4	9.3	16.6
1936	..	..	12.8	3.3	56.8	20.1	237.6	152.2	38.4	33.1	9.5	15.8
			Mesentery and Peritoneum.		Intestine.		Rectum and Anus.		Ovary and Fallopian Tube.		Uterus.	
1901–10	..	..	8.2	15.8	63.5	72.3	79.8	55.9	—	19.2	—	?
1911–20	..	..	6.0	12.0	96.8	109.2	93.6	59.3	—	24.3	—	174.4
1921–30	..	..	5.4	8.1	124.8	128.5	105.0	59.3	—	36.1	—	157.7
1931	..	..	5.3	6.6	136.1	136.3	109.1	59.5	—	42.7	—	139.9
1932	..	..	4.6	6.3	136.8	133.9	113.5	59.8	—	43.3	—	137.8
1933	..	..	3.9	6.0	139.4	140.5	111.1	56.5	—	44.9	—	134.5
1934	..	..	4.2	5.5	138.9	141.5	111.3	59.0	—	47.5	—	135.8
1935	..	..	4.8	5.6	136.8	138.4	112.8	56.3	—	48.3	—	133.9
1936	..	..	4.2	5.8	145.0	138.1	110.2	56.8	—	51.8	—	128.1
			Breast.		Rodent Ulcer.		Penis.		Scrotum.		Other Skin.	
1901–10	..	..	1.5	158.4	?	?	?	—	?	—	?	?
1911–20	..	..	1.6	170.8	6.7	4.3	6.6	—	2.4	—	17.6	10.9
1921–30	..	..	1.8	188.4	8.4	4.8	6.4	—	2.7	—	17.5	10.1
1931	..	..	2.3	200.2	9.0	4.7	6.5	—	2.6	—	17.5	9.2
1932	..	..	1.8	196.6	8.0	4.2	6.0	—	2.8	—	16.1	11.0
1933	..	..	2.0	197.9	7.2	3.9	5.7	—	2.3	—	15.6	9.9
1934	..	..	1.9	197.9	7.9	4.1	6.8	—	2.3	—	15.0	8.4
1935	..	..	2.7	196.0	7.2	4.0	6.0	—	2.1	—	14.3	8.9
1936	..	..	2.8	200.7	6.7	3.9	6.7	—	1.5	—	16.4	9.0
			Larynx.		Lung.		Pancreas.		Kidney and Suprarenal.		Bladder.	
1901–10	..	..	?	?	10.2	7.0	14.5	11.8	8.4	7.6	?	?
1911–20	..	..	23.9	6.0	12.7	7.0	16.7	13.1	9.1	7.2	28.2	9.7
1921–30	..	..	31.2	7.1	25.1	9.6	26.3	19.4	11.7	8.8	30.3	11.3
1931	..	..	31.7	7.9	51.2	16.3	28.8	21.6	13.9	9.5	34.2	11.0
1932	..	..	30.7	7.2	57.0	17.2	32.0	23.1	13.7	10.1	32.0	11.2
1933	..	..	30.8	7.1	66.8	17.6	32.4	24.7	14.1	10.3	32.5	12.0
1934	..	..	30.7	7.3	75.3	20.3	33.0	23.5	15.8	10.2	33.6	10.5
1935	..	..	29.5	6.8	82.2	22.2	34.4	24.6	13.6	9.2	32.9	10.8
1936	..	..	29.5	8.2	90.1	23.6	36.0	26.2	14.6	9.6	33.0	12.0
			Prostate.		Testis.		Bones.		Mediastinum.			
1901–10	..	..	11.8	—	?	—	?	?	8.1	4.5		
1911–20	..	..	26.5	—	4.9	—	15.7	12.0	9.2	4.6		
1921–30	..	..	47.3	—	5.8	—	17.5	13.4	12.6	5.8		
1931	..	..	56.4	—	5.9	—	16.5	11.7	11.4	4.6		
1932	..	..	58.5	—	6.8	—	16.8	13.3	9.8	4.0		
1933	..	..	57.4	—	6.6	—	16.4	13.0	9.8	4.1		
1934	..	..	56.2	—	6.5	—	17.6	12.2	8.8	4.1		
1935	..	..	62.1	—	6.4	—	18.1	14.7	8.9	3.5		
1936	..	..	62.7	—	6.8	—	20.2	14.5	7.9	3.4		

* Includes palate, cheek (internal surface), salivary glands, gums (see Table LXII, note (1)).

Effect of Multiple Cause classification on Cancer death rates.—When combined with some other disease as cause of death cancer takes precedence over almost all diseases in accordance with Rule 6 (Manual of the International List). The cancer deaths tabulated approximately represent, therefore, the deaths of persons who have

been suffering from cancer rather than the deaths due to cancer. In some instances the certifying physician regards the cancer as merely a contributory cause not directly connected with the principal cause, and such deaths would not be classed to cancer but to the other cause by a literal reading of the certificates. Classification of deaths according to the order of statement of causes as certified rather than by the use of selective rules would reduce the number of deaths assigned to cancer in 1936 from 66,354 to 63,751 or by 4 per cent., the groups most affected being cancer of the skin (from 1,158 to 980, or by 15 per cent.) and of the breast (from 7,158 to 6,682, or by 7 per cent.).

Cancer of Uterus, Breast and Ovary in Married Women according to Social Class.—The Registrar-General's Decennial Supplement, Part IIa, 1931, Occupational Mortality, Table 8, gives the deaths at various ages from cancer of each site in 1930–32 of married women whose husbands were in occupations of each social class. The death rates of married women from cancer of the uterus, breast and ovary at ages between 35 and 65, calculated from these data, are given in Table LVII for each social class of the husband (Class I professional,

Table LVII.—Cancer of Uterus, Breast, Ovary and Other Sites. Mortality of Married Women by Age and Social Class of Husband in 1930–32.

Site of Cancer	Social Class of husband	Mean annual death rate per million at ages :—			Standardized mortality ratio (registered per cent. of calculated deaths) at 35–65	Proportion per 1,000 deaths from Cancer of all sites at ages 65 and over.
		35–	45–	55–65		
Uterus	All*	209	445	619	100	103
	I	119	264	469	65	78
	II	144	348	515	78	96
	III	197	438	635	99	102
	IV	239	466	627	106	110
	V	294	591	754	130	110
Breast	All*	197	527	829	100	145
	I	269	715	1,164	138	192
	II	221	588	1,010	116	169
	III	203	547	842	103	144
	IV	168	450	681	84	127
	V	162	420	685	81	116
Ovary	All*	44	126	164	100	27
	I–II	53	142	212	120	33
	III	43	138	158	102	28
	IV	38	87	131	77	18
	V	38	108	129	83	20
All other sites.. ..	All*	297	926	2,400	100	725
	I	289	803	1,994	86	694
	II	262	853	2,280	93	702
	III	307	922	2,472	102	726
	IV	300	954	2,275	98	745
	V	295	1,004	2,651	107	754

* Including wives of men never gainfully occupied and therefore unclassified.

etc.; Class III, skilled; Class V, unskilled; Classes II and IV, intermediate). Cancer of the uterus shows at each age period an increasing mortality in passing from Class I to Class V, whereas cancer of the breast and ovary show the reverse trend. At ages 35–65 combined, the standardized ratio increases from 65 in Class I to 130 in Class V for cancer of the uterus, but decreases from 138 to 81 for cancer of the breast, being also lowest in Classes IV and V for cancer of the ovary. For all other sites of cancer in combination mortality at 35–65 increases slightly in passing from Class I to Class V.

At ages over 65 the calculation of death rates according to social class is prejudiced to some extent by the incomplete statement of the last occupation of retired men on death certificates, and at these ages proportionate mortality figures are given representing the numbers of deaths from cancer of the specified site in each thousand total cancer deaths. When comparison is made between the tendency of cancer to select the uterus on the one hand and the breast and ovary on the other in married women of the different social classes the same contrasts are evident as at the earlier ages. In Class I, 8 per cent. of all cancer deaths at 65 and over are from cancer of the uterus and 19 per cent. from cancer of the breast, whereas in Class V the proportions are about 11 per cent. for each of these sites. On the same basis of comparison, at ages 35–65 in Class I, 13 per cent. of all cancer deaths of married women are from cancer of the uterus and 33 per cent. from cancer of the breast, whereas in Class V the proportions are 25 and 18 per cent. respectively. Mortality from cancer of the ovary forms, as at earlier ages, a lower percentage of all cancer in Classes IV and V than in Classes I–II, whilst relative mortality from all other sites of cancer in combination increases slightly from about 69 per cent. in Class I to 75 per cent. in Class V.

54, 55.—Tumours not returned as malignant.—Table LVIII analyses according to sex, age, and site of the tumour all deaths from new growths not definitely stated to be malignant which were assigned to No. 54, Non-malignant tumours, and to No. 55, Tumours of undetermined nature, during 1936, the criterion of malignancy being that defined in the Manual of the International List of Causes of Death (1929 Revision). The non-malignant group numbered 1,448, the pathological variety of the tumour being specified in 1,390 instances ("classified tumours"), and the growth merely described as benign in 58 ("benign, unclassified"). Table LXXXVIII shows that inquiries concerning tumours of unstated nature resulted in 693 being assigned to cancer and 62 to glioma, but for 1,227 deaths the malignant or non-malignant nature of the growth could not be ascertained by inquiry and these were assigned to No. 55 and are analysed under the description "nature unstated" in Table LVIII. The arrangement of the latter table differs slightly from that used in the corresponding tables in 1931–34 where "other benign" or "non-malignant" tumours included

Table LVIII.—Deaths attributed to Tumours not returned as Malignant, and classed to No. 54 Non-malignant tumours and No. 55 Tumours of undetermined nature, 1936.

List No.				All Ages.		0—		15—		35—		45—		55—		65—		75 and up	
				M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
54a	Ovary	..	..	—	231	—	1	—	16	—	40	—	43	—	52	—	44	—	35
"	"	..	..	—	2	—	—	—	—	—	—	—	2	—	—	—	—	—	—
"	"	..	..	—	13	—	—	—	3	—	3	—	1	—	4	—	1	—	1
"	"	..	..	—	9	—	—	—	1	—	—	—	1	—	2	—	2	—	3
55a	"	..	..	—	9	—	—	—	—	—	—	—	2	—	—	—	5	—	2
54a	Uterus	..	..	—	306	—	—	—	13	—	96	—	125	—	32	—	25	—	15
"	"	..	..	—	4	—	—	—	—	—	2	—	1	—	1	—	—	—	—
"	"	..	..	—	8	—	—	—	4	—	4	—	—	—	—	—	—	—	—
"	"	..	..	—	5	—	—	—	—	—	3	—	1	—	1	—	—	—	—
"	"	..	..	—	6	—	—	—	—	—	2	—	3	—	—	—	—	—	1
55a	"	..	..	—	4	—	—	—	—	—	1	—	—	—	1	—	2	—	—
54a	Broad ligament	..	..	—	2	—	—	—	1	—	—	—	—	—	—	—	1	—	—
"	"	..	..	—	3	—	—	—	—	—	—	—	1	—	—	—	1	—	1
"	"	..	..	—	2	—	—	—	—	—	1	—	—	—	1	—	—	—	—
54a	Fallopian tube	..	..	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
54a	Vagina	..	..	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
54a	" Pelvis "	..	..	—	4	—	—	—	—	—	—	—	—	—	1	—	1	—	2
"	"	..	..	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—
55a	"	..	..	—	2	—	—	—	—	—	1	—	—	—	—	—	1	—	—
54b	Brain	..	..	5	5	—	1	2	—	1	2	2	2	—	—	—	—	—	—
"	"	..	..	19	21	3	3	4	7	5	4	1	7	5	—	1	—	—	—
"	"	..	..	13	13	3	5	3	2	3	4	—	1	4	1	—	—	—	—
"	"	..	..	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
"	"	..	..	159	122	14	10	23	26	33	31	48	27	38	24	2	3	1	1
"	"	..	..	6	1	—	—	1	—	3	—	1	—	1	—	—	—	—	1
"	"	..	..	15	14	—	—	5	4	1	3	4	5	5	2	—	—	—	—
"	"	..	..	6	13	—	—	—	3	—	3	2	2	2	4	2	1	—	—
55b	"	..	..	430	463	51	24	72	83	74	73	98	111	91	105	38	53	6	14
54b	Pituitary gland	..	..	8	16	—	—	1	4	1	6	3	3	3	3	—	—	—	—
"	"	..	..	1	3	—	1	—	—	—	1	—	1	—	1	—	—	—	—
55b	"	..	..	6	13	1	1	—	3	3	1	1	4	1	3	—	—	—	1
54b	Thyroid	..	..	—	2	—	—	—	—	—	—	—	1	—	—	—	—	—	1
55b	"	..	..	3	1	—	—	1	—	—	—	—	—	1	—	—	1	1	—
54b	Spinal cord	..	..	4	—	—	—	2	—	—	—	—	—	2	—	—	—	—	—
"	"	..	..	3	4	—	—	—	1	—	1	—	1	—	1	—	1	2	—
"	"	..	..	1	5	—	—	—	1	—	1	—	2	—	1	—	1	—	—
"	"	..	..	2	3	—	—	—	—	—	1	—	1	—	1	—	—	—	—
"	"	..	..	1	1	—	—	—	—	—	1	—	—	1	—	—	—	—	—
55b	"	..	..	3	6	—	—	—	—	—	—	2	1	—	1	—	1	1	2
54b	Eye	..	..	4	1	4	1	—	—	—	—	—	—	—	—	—	—	—	—
54b	Ear	..	..	6	2	—	1	3	—	2	—	—	—	—	—	1	1	—	—
54b	Nose	..	..	9	6	—	—	1	—	3	1	2	2	2	1	1	1	—	1
"	"	..	..	—	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
54b	Larynx	..	..	2	1	—	—	—	—	1	—	1	1	—	—	—	—	—	—
55b	"	..	..	2	1	1	—	—	—	—	—	—	—	—	1	—	1	—	—
54b	Mediastinum	..	..	4	3	1	—	—	2	—	—	1	1	1	—	1	—	—	—
"	"	..	..	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
55b	"	..	..	40	19	—	—	1	—	3	—	8	4	17	5	8	6	3	—
55a	Lung	..	..	4	2	1	—	—	—	1	—	1	—	—	2	—	—	1	—
"	"	..	..	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
55b	"	..	..	45	17	—	—	3	1	5	1	12	1	18	6	7	4	—	—
55a	Parotid	..	..	4	8	—	—	—	—	—	—	—	2	—	1	2	3	2	—
"	"	..	..	—	2	—	—	—	—	—	—	—	—	—	1	—	—	—	—
55b	"	..	..	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—

* Includes Fibroma, Fibromyoma. † Adenoma 45-, 85-; Adenomyoma 35-, 40-, 50-; Papilloma 50-. ‡ In the corresponding tables in 1934 and previous years "glioma" included cystic glioma, oligodendroglioma, ependymoma. § Fibroma M.30-, M.40-, M.55-, 2F. 45-; Neurofibroma 2 M.50-, F.35-, F.50-; Endothelioma (non malignant) M.60-, F.35-, F.40-, F.60-; Cholesteatoma M.20-, F.60-; Glioblastoma M.45-, M.50-, M.55-, M.60-, F.30-, F.50-; Gliomatous Astroblastoma M.55-; Ependymoma 3 M.25-, F.15-, 2 F.30-; Psammoma F.45-. || Cyst M.25-, M.50-, M.55-, F.45-, F.55-; Adenoma 2 M.50-, 2 M.60-, F.25-, F.30-, 3 F.35-, 2 F.40-, F.45-, F.50-, 2 F.60-; Cystadenoma F.20-; Embryoma M.35-; Meningioma (non malignant) F.20-; Fibroid F.35-; ¶ Lipoma M.50-, F.35-; Neurocytoma M.55-; Ependymoma F.50; Hæmangioma F.60-.

Table LVIII.—continued.

List No.			All Ages.		0—		15—		35—		45—		55—		65—		75 and up	
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
55b	Œsophagus	.. Nature unstated ..	6	3	—	—	—	—	—	—	—	—	2	—	3	—	1	3
54b	Stomach	.. Classified tumours ..	3	—	—	—	—	—	—	—	1	—	1	—	1	—	—	—
55b		Benign (unclassified) ..	1	1	—	—	—	—	—	—	—	—	—	—	1	—	—	1
55b		Nature unstated ..	4	2	—	—	—	—	—	—	—	—	2	—	—	—	2	2
54b	Intestine	.. Classified tumours ..	6	6	—	—	1	2	1	1	2	1	1	1	1	1	—	—
55b		Nature unstated ..	17	25	—	1	1	1	1	—	2	—	—	2	6	9	7	12
54b	Rectum	.. Classified tumours ..	3	1	1	—	—	—	—	—	—	—	1	—	1	1	—	—
54b	Liver	.. Classified tumours ..	1	3	—	—	—	2	—	—	—	—	—	1	—	—	1	—
55b		Nature unstated ..	5	7	—	—	—	—	1	—	—	—	1	4	1	—	2	3
54b	Pancreas	.. Classified tumours ..	7	6	—	—	—	—	1	—	—	2	4	—	1	4	1	—
55b		Benign (unclassified) ..	—	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—
55b		Nature unstated ..	3	1	—	—	1	—	—	—	—	—	1	1	—	—	1	—
54b	Kidney	.. Classified tumours ..	1	2	—	1	—	—	—	—	1	—	—	1	—	—	—	—
55b		Benign (unclassified) ..	1	2	1	—	—	—	—	—	1	—	—	1	—	—	—	—
55b		Nature unstated ..	8	—	2	—	—	—	—	—	2	—	—	—	2	—	2	—
54b	Adrenal	.. Classified tumours ..	1	3	1	—	—	1	—	1	—	—	—	—	—	1	—	—
55b		Benign (unclassified) ..	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
55b		Nature unstated ..	1	1	1	—	—	—	—	—	—	—	—	1	—	—	—	—
54b	Bladder	.. Classified tumours ..	118	40	—	—	3	—	2	—	3	3	25	10	52	12	33	15
55b		Benign (unclassified) ..	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
55b		Nature unstated ..	5	8	—	—	—	—	—	—	—	—	—	—	2	3	3	5
54b	Testicle	.. Classified tumours ..	4	—	—	—	—	—	2	—	1	—	—	—	1	—	—	—
55b		Nature unstated ..	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
54b	Breast	.. Classified tumours ..	—	3	—	—	—	—	—	2	—	—	—	—	—	1	—	—
55b		Benign (unclassified) ..	—	2	—	—	—	—	—	—	1	—	—	—	—	1	—	—
55b		Nature unstated ..	1	1	—	—	—	—	—	—	—	—	—	—	—	—	1	1
54b	Jaw	.. Classified tumours ..	1	2	—	—	—	—	—	—	—	—	1	1	—	—	—	1
55b		Nature unstated ..	—	2	—	—	—	—	—	—	—	—	—	—	—	1	—	1
54b	Spine	.. Classified tumours ..	2	6	—	1	1	2	—	1	1	2	—	—	—	—	—	—
55b		Benign (unclassified) ..	—	2	—	—	—	1	—	—	—	—	—	1	—	—	—	—
55b		Nature unstated ..	5	7	—	—	—	—	1	—	1	3	1	2	2	—	—	2
54b	Neck	.. Classified tumours ..	2	4	1	2	1	—	—	—	—	—	—	—	—	1	—	1
55b		Nature unstated ..	1	1	—	1	—	—	1	—	—	—	—	—	—	—	—	—
54b	Thorax	.. Classified tumours ..	—	2	—	1	—	1	—	—	—	—	—	—	—	—	—	—
55b		Nature unstated ..	7	3	—	—	—	—	—	—	2	1	3	2	2	—	—	—
54b	Abdomen	.. Classified tumours ..	3	2	—	—	—	—	—	—	—	1	2	—	—	1	1	—
55b		Benign (unclassified) ..	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—
55b		Nature unstated ..	4	17	—	—	—	1	—	1	1	3	1	2	1	3	1	7
54b	Other sites	.. Classified tumours ..	35	35	8	5	6	3	4	6	1	9	9	5	4	6	3	1
55b		Benign (unclassified) ..	3	3	1	1	—	—	—	1	—	—	1	—	—	—	1	1
55b		Nature unstated ..	9	7	2	1	—	2	1	—	2	2	1	—	3	—	—	2
54b	Site not stated	.. Classified tumours ..	—	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
54, 55	Total (54 and 55)	.. ..	1,079	1,596	97	62	137	192	155	303	209	389	254	292	150	208	77	150
	Total classified benign tumours	..	455	935	37	32	57	95	65	217	76	251	107	147	70	114	43	79
	„ unclassified „	..	17	41	2	2	1	6	—	7	2	6	7	9	3	5	2	6
54	„ benign tumours	..	472	976	39	34	58	101	65	224	78	257	114	156	73	119	45	85
55	„ nature unstated	..	607	620	58	28	79	91	90	79	131	132	140	136	77	89	32	65

types of classified tumours for which the deaths during the year numbered less than 3. Full details of the classified tumours are now shown for the uterus, brain, pituitary and spinal cord, and are available for these and all other sites in detail for each year since 1921.

Adenoma, myo-adenoma, fibro-adenoma and fibroid of the prostate are classed to No. 137, Diseases of the prostate, because these conditions seem to be scarcely distinguishable from that described as prostatic hypertrophy. Other non-malignant or undefined tumours of the prostate are included in Table LVIII. Adenoma of the thyroid is also not included in this table, but is assigned to No. 66 (*a*), Simple goitre.

Table LIX brings together all deaths from tumours of the brain (or meninges), whether classed to No. 53, Cancer, No. 54, Non-malignant tumours or No. 55, Tumours of undetermined nature, in each year 1921 to 1936. During this period the annual number of deaths from tumours in the last group has remained almost unchanged, but those attributed to cancer and classified tumours other than "glioma" have rapidly increased. The number included under the glioma heading has not changed greatly since 1928. The combined crude death rate at all ages from all tumours of the brain has risen from 32 to 43 per million for males and from 28 to 38 for females.

Deaths ascribed to pituitary tumour other than cancer have increased from 16 in 1921 to 47 in 1936. Deaths from tumour of the lung not described as malignant increased from numbers ranging

Table LIX.—Deaths classed to Cancer, Glioma and Other Tumours of the Brain and Mortality per Million living from all tumours of the Brain, 1921–36.

—	No. of Deaths.										Rate per million (all ages).	
	Classed to Cancer (No. 53).		Glioma* (No. 54 <i>b</i>).		Other classified† or "Benign" tumours (No. 54 <i>b</i>).		Nature unstated (No. 55 <i>b</i>).		All Tumours.		All Tumours.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1921	52	44	89	57	24	15	408	437	573	553	32	28
1922	66	45	72	73	15	18	429	421	582	557	32	28
1923	77	52	100	71	17	8	424	445	618	576	34	29
1924	77	51	94	84	29	14	430	400	630	549	34	27
1925	65	55	105	80	24	14	389	423	583	572	31	28
1926	51	56	110	93	18	21	447	445	626	615	33	30
1927	82	72	146	104	16	22	420	450	664	648	35	32
1928	91	63	181	131	27	30	434	427	733	651	39	32
1929	81	79	154	138	29	34	443	441	707	692	37	34
1930	90	70	206	131	33	23	427	453	756	677	40	33
1931	103	76	193	139	43	34	417	420	756	669	39	32
1932	120	96	206	130	49	43	395	426	770	695	40	33
1933	155	117	149	142	47	49	441	409	792	717	41	34
1934	141	120	163	129	54	55	439	446	797	750	41	36
1935	165	142	167	140	53	37	430	427	815	746	42	35
1936	197	158	162	126	61	64	430	463	850	811	43	38

* Includes, in this table, glioma, cystic glioma, oligodendroglioma, ependymoma (even if stated to be benign).

† Includes angioma, cyst, astrocytoma, meningioma, blastocystoma, fibroma, adenoma, neuroma, psammoma, cholesteatoma, non malignant endothelioma, glioblastoma, astroblastoma, etc.

between 11 and 21 during 1912-19 to 97 in 1934 but fell to 69 in 1936. Like lung cancer, which has also increased rapidly (Table LVI), they affect males much more than females. The ratios of malignant to benign tumours of the mediastinum, lung, and abdominal organs suggest that large proportions of those returned as of unknown nature were probably malignant.

56. Rheumatic Fever and Rheumatic Heart Disease.—Deaths assigned to rheumatic fever numbered 1,142 in 1936 compared with annual averages of 1,551 in 1926-30 and 1,249 in 1931-35. The standardized death rate of males has fallen from 54 per million in 1920 to 29 in 1936, and for females from 59 to 32 in the same period. The trend of mortality at different ages is shown in Table LX where death rates are compared for each sex at intervals of 20 years, namely in 1891-1900, 1911-20 and 1935-36. In the last 20 years there has been a decline in mortality at every age period for each sex, but the proportionate decrease has been much greater at ages after 35 than in childhood. Mortality is maximal at 10-15 and at this period male mortality has fallen by about 25 per cent. since 1911-20 whereas after mid-life it has fallen by more than 50 per cent.

Table LX.—Rheumatic Fever: Mean Annual Mortality per Million living by Sex and Age, 1891-1900, 1911-20, 1935-36.

Ages	Males			Females		
	1891-1900	1911-20	1935-36	1891-1900	1911-20	1935-36
All ages (standardized.)	89	48	29	83	51	33
0-	20	18	15	20	14	12
5-	74	61	53	76	63	58
10-	92	78	58	109	95	72
15-	97	64	43	112	73	48
20-	80	41	29	80	53	37
25-	96	38	18	73	40	21
35-	110	42	17	85	41	19
45-	102	50	20	97	48	21
55-	116	53	18	100	51	21
65-	142	50	24	120	45	15
75 and over	148	33	11	111	41	19

Deaths from rheumatic heart disease are only classed to rheumatic fever when the heart affection is designated as "acute (or subacute) rheumatic," or when it is stated or found on inquiry that rheumatic fever was present at the time of death. A sample of 831 deaths

classified to rheumatic fever in the year 1924, when analysed according to the form of statement and associated causes, included the following numbers of deaths:—

	<i>Males</i>	<i>Females</i>
Total deaths classed to rheumatic fever (No. 56)	378	453
Number of these with mention of:—		
One or more heart lesions (total) ..	233	342
Endocarditis (acute, malignant or subacute)	110	191
Valvular disease (mitral, aortic, other or unspecified)	73	98
Pericarditis	31	45
Myocarditis	12	26
"Carditis"	9	11
Other heart disease	14	15

There were, therefore, 575 deaths out of 831, or 69 per cent., with mention of some heart affection, the age distribution being as follows:—

Age group	Total classed to rheumatic fever		Numbers of these with mention of a heart affection	
	M.	F.	M.	F.
0—	16	14	8	9
5—	36	53	20	45
10—	69	93	51	88
15—	81	102	58	84
25—	78	91	53	70
45—	79	76	37	36
65 and over	19	24	6	10
All ages	378	453	233	342

At ages under 15 the proportion with mention of a heart affection was 65 per cent. for boys and 89 per cent. for girls; at 15–25 it was 72 per cent. for males and 82 per cent. for females; at 25–45 it was 68 per cent. for males and 77 per cent. for females, and at ages 45 and over 44 per cent. for males and 46 per cent. for females. The death certificates of females from rheumatic fever in early life, therefore, contained a more frequent mention of heart affection than did those of males, and the proportion fell considerably after the age of 45 for each sex.

Endocarditis was mentioned in 301 out of the sample of 831 deaths, valvular disease in 171, pericarditis in 76, myocarditis in 38, "carditis" in 20 and other heart affections in 29, the excess of the total over 575 being accounted for by the frequent mention of combinations of these conditions.

When rheumatic fever or chronic rheumatism is mentioned as a cause of chronic heart disease, rheumatic fever not being stated to be present at the time of death, classification is made to the heart disease group, the great majority of deaths from chronic endocarditis having no mention of rheumatism although many were of rheumatic origin. Out of a sample of 12,889 deaths classed to heart disease in 1924 (including 4,815 from endocarditis or valvular disease) only 137 of the certificates mentioned rheumatism as the cause of the heart lesion. Since rheumatism is so rarely mentioned as the cause of chronic endocarditis, although it is usually implied, no significance can be attached to its mention for purposes of classification, and it is impossible from death certificates to ascertain with any accuracy the actual proportion of heart disease deaths which are of remote rheumatic origin. In the alternative tabulation carried out in 1936 according to the order of preference of causes stated by the certifying physician, an exception has, therefore, been made in the case of rheumatism in conjunction with heart disease bearing in mind the definition of the rheumatic fever heading (namely that it is intended to include only those heart disease deaths where rheumatic fever was stated to have been present at the time of death) and mention of rheumatism as a cause of chronic heart disease has been ignored as heretofore. With this necessary proviso no appreciable change would result in rheumatic fever death rates by a system of classification in accordance with the physician's preference, the deaths in 1936 being increased from 1,142 to 1,153. (See also Table LXIX.)

The changes which occurred between 1924 and 1934 in the death rates at separate ages from pericarditis and from endocarditis and valvular disease were shown in Table LXXIV of the Review for 1934, and it was found that pericarditis mortality had fallen at every age under 75 whilst endocarditis and valvular disease mortality had fallen at every age period except 5-25, a slight increase being recorded at this period of school and young adult life. The trend of registered mortality at these ages from rheumatic fever, pericarditis and endocarditis or valvular disease since 1925 is shown below by the mean annual death rates per million living in 4 successive triennial periods.

		Ages 5-15		Ages 15-25	
		Males	Females	Males	Females
Rheumatic Fever	1925-27	75	90	49	60
	1928-30	69	83	41	52
	1931-33	57	62	36	49
	1934-36	56	74	36	43
Pericarditis	1925-27	7	6	5	3
	1928-30	5	5	5	3
	1931-33	5	5	5	2
	1934-36	5	4	3	2
Endocarditis acute or chronic, and valvular disease	1925-27	83	114	151	187
	1928-30	96	121	161	213
	1931-33	80	103	156	204
	1934-36	87	106	151	190

Amongst children of school age rheumatic fever mortality has declined since 1925–27 by 25 per cent. for boys and 18 per cent. for girls, and for young adults by about a quarter. Pericarditis mortality has also declined in each group. Endocarditis and valvular disease mortality has not decreased appreciably as judged by the triennial rates in 1934–36, but the death rates at the school ages in 1936 were remarkably low, 71 for boys and 86 for girls.

59. Diabetes.—The deaths allocated to this disease numbered 7,119, 2,731 of males and 4,388 of females, corresponding to standardized death-rates of 95 for males and 120 for females. This rate has been in excess for females in each year from 1923 onwards, whereas before that date excess for males was an invariable rule, though its amount had long been decreasing.

The trend of diabetes mortality since 1861–70 was discussed in the Review for 1933. At ages under 45 male standardized mortality increased until 1891–1900, remained stationary until 1912, and then rapidly increased to 1915. The rates of the next 5 years, relating to civilians only, were greatly influenced by selection, but from 1920 to 1922 the rate was again rising. The introduction of insulin in 1923 was accompanied by a drop from 41 per million in 1922 to 26 in 1924 and a further gradual fall has occurred to 17 in 1936. At ages 45–55 male mortality behaved similarly; it remained stationary, about 160 per million, from 1891–1900 to 1913, fluctuated during 1914–20 and had not quite regained its former level by 1922. The following years witnessed a drop from 143 to a mean level of 88 in 1926–28, rising slightly to 90 in 1931–33 and 93 in 1934–36 (Table LXI).

Mortality of females at ages under 45, steadily increased until 1901–10, when the standardized rate was 32 per million, and fluctuated about that level during the next decade. With the use of insulin the rate fell from 34 in 1922 to 25 in 1924, and then fluctuated between 21 and 25, being 20 in 1936. At ages 45–55 the rate was steadily rising up to 1913, then rapidly declined during 1915–18 but increased again almost as quickly in the succeeding years to 1923. The fall which then occurred has not been so well maintained as at the earlier ages; the introduction of insulin interrupted for several years the upward trend of registered mortality at this age period, just as food restriction and other factors had done in 1915–18.

At ages 55–65 mortality steadily increased up to 1915 for both sexes, declined abruptly in the period of food restriction, and was again rising from 1920 to 1922 (Review for 1933, Diagram 4). From 1923 onwards the male rate at 55–65 has not appreciably changed, whilst the female rate increased by 35 per cent. in excess of 1920–22 by 1929 and has fluctuated about that level since. Male mortality at ages over 65, which had not regained the 1911–14 level by 1922, remained stationary until 1925 and then rose rapidly to 1928. At 65–75 the male rate then showed little change until 1936, when it rose to 968, whilst at 75 and over the rate has continued to rise,

reaching the high level of 1,569 per million in 1936. The rise in the female rates at these ages has been sustained with few interruptions since 1918.

The reasons for the continuous increase in death rates assigned to diabetes have been frequently commented upon, but it has not been possible to estimate how much of this has been due to a rising incidence of diabetes, how much to an increasing recognition of the

Table LXI.—Mortality from Diabetes in 1920–22 and in subsequent years.

	Standardized Rates.			0–	15–	25–	35–	45–	55–	65–	75 and up
	All ages	0–55	55 and up								

DEATH-RATES PER MILLION LIVING.

Males :—											
1920–22 ..	93·7	47·9	477·5	14	42	60	69	133	309	661	772
1931 ..	88·1	29·5	580·3	12	22	30	38	97	315	821	1,161
1932 ..	92·4	28·9	625·6	10	21	30	45	93	320	897	1,310
1933 ..	92·3	28·5	628·2	13	26	30	36	80	325	888	1,326
1934 ..	91·0	27·2	627·0	10	22	27	32	94	331	889	1,292
1935 ..	89·5	24·2	637·4	10	16	24	30	87	321	919	1,344
1936 ..	94·6	24·7	680·8	10	16	24	26	97	320	968	1,569
Females :—											
1920–22 ..	90·1	43·1	483·9	16	35	48	62	124	355	656	632
1931 ..	110·9	33·4	762·0	11	26	31	45	121	473	1,097	1,218
1932 ..	112·4	32·5	783·3	13	20	29	46	118	485	1,143	1,219
1933 ..	114·3	33·5	793·0	12	25	30	48	118	470	1,178	1,275
1934 ..	114·9	30·7	821·4	10	18	28	44	123	490	1,204	1,344
1935 ..	117·0	30·4	844·3	9	21	29	39	120	499	1,236	1,410
1936 ..	120·1	29·6	879·6	9	19	23	46	118	496	1,323	1,486

MORTALITY OF LATER YEARS PER CENT. OF THAT IN 1920–22.

Males :—											
1923 ..	96	79	110	79	79	80	87	74	104	113	114
1924 ..	92	72	108	64	69	63	75	83	104	105	122
1925 ..	87	67	104	79	52	72	62	70	93	106	120
1926 ..	92	68	112	93	67	60	70	68	105	112	124
1927 ..	94	67	116	79	74	68	58	63	107	116	133
1928 ..	97	63	126	93	60	55	55	68	107	136	140
1929 ..	101	73	125	86	60	60	90	79	106	130	150
1930 ..	99	65	128	71	57	63	59	74	109	130	154
1931 ..	94	62	122	86	52	50	55	73	102	124	150
1932 ..	99	60	131	71	50	50	65	70	104	136	170
1933 ..	99	59	132	93	62	50	52	60	105	134	172
1934 ..	97	57	131	71	52	45	46	71	107	134	167
1935 ..	96	51	133	71	38	40	43	65	104	139	174
1936 ..	101	52	143	71	38	40	38	73	104	146	203
Females :—											
1923 ..	104	95	112	69	86	92	95	115	110	112	116
1924 ..	98	75	116	69	80	67	76	80	110	118	116
1925 ..	104	80	122	69	86	67	85	90	111	131	128
1926 ..	101	74	121	56	71	73	82	80	113	127	128
1927 ..	112	76	139	69	71	67	73	91	131	135	173
1928 ..	112	79	138	69	74	69	66	102	118	147	163
1929 ..	123	81	155	69	63	65	84	106	135	157	196
1930 ..	119	72	155	69	51	56	71	99	131	165	193
1931 ..	123	77	157	69	74	65	73	98	133	167	193
1932 ..	125	75	162	81	57	60	74	95	137	174	193
1933 ..	127	78	164	75	71	63	77	95	132	180	202
1934 ..	128	71	170	63	51	58	71	99	138	184	213
1935 ..	130	71	174	56	60	60	63	97	141	188	223
1936 ..	133	69	182	56	54	48	74	95	140	202	235

disease as the real cause of death and how much to increasing mention of it on death certificates as a subsidiary cause. The selective rules for classification of multiple cause deaths give precedence to diabetes over most important causes except acute infective diseases, cancer, rheumatic fever and acute ileus, and this tends to exaggerate the mortality assigned to diabetes and to make the rates represent the mortality of diabetics rather than the mortality due to the disease. When a diabetic dies from pneumonia or heart disease mention is usually made of diabetes on the certificate, but very often it will be entered, and rightly so, as a contributory cause not directly connected with the disease responsible for death. In the year 1912, of 4,051 deaths classed to diabetes 1,425 or 35 per cent. had some other complicating cause mentioned on the death certificate, as may be ascertained from Table A and the supplementary list on page 573 of the Annual Report for 1914. A random sample of 851 deaths classed to diabetes in the year 1924 has been analysed according to the associated causes, and shows that by that year the proportion of deaths with association of one or more other causes had increased to 43 per cent. The sample also shows that the proportions of diabetes death certificates with an associated cause at different ages were as follows :—

	Total	Without associated cause	With 1 associated cause	With 2 or more causes	Per cent. with 1 or more associated causes
All ages	851	485	316	50	43
0— ..	60	52	8	—	13
25— ..	94	76	15	3	19
45— ..	97	58	32	7	40
55— ..	226	117	93	16	48
65— ..	257	124	120	13	52
75 and over	117	58	48	11	50

At ages under 25 only 13 per cent. had an associated cause but the proportion increased with advancing age to about 50 per cent. at ages over 55, and from this it may be deduced that the exaggeration of the death rate arising from the operation of the selective rules was greater at the advanced ages.

The new form of death certificate, introduced in 1927, has almost certainly resulted in a further increase of the tendency to mention diabetes as a contributory cause of death and with the gradual accumulation in the population of diabetics under insulin treatment who might otherwise have died from diabetes the proportion of such cases must be expected to increase. Statistics are now available from the dual tabulation carried out in 1936 which show in an exact manner to what extent the high preference in classification given to diabetes over other diseases when stated in conjunction with it tends to overstate the mortality above that which is in reality caused by diabetes. There were in 1936, 2,731 deaths of males assigned to

diabetes when the selective rules were used, but classification of multiple cause deaths according to the physician's choice of the essential cause would result in 944 or 35 per cent. of these being transferred to other causes. On the other hand an inward transfer of 75 deaths of males would result from causes such as cancer, preferred to diabetes by rule, where the physician considered diabetes to be the essential cause. The resultant overstatement of the male deaths, therefore amounts, on this basis, to 869, a proportion of 32 per cent. of the larger total as tabulated or 47 per cent. of the corrected total. For females the 4,388 deaths would be decreased by transfer to other causes by 1,378 or 31 per cent., partly compensated by an inward transfer of 110 deaths, the overstatement being 29 per cent. of the larger total or 41 per cent. of the corrected total.

This 30 per cent. net transfer of diabetes deaths to other causes in 1936 does not, of course, represent all the deaths classed to diabetes with mention of some other cause, but only those in which the physician regarded the diabetes as merely contributory and not in the direct line of causation, and it is not, therefore, comparable with the proportions of 35 per cent. in 1912 and 43 per cent. in 1924 mentioned above. It seems most improbable, however, that in 1924 a transfer of less than half of the 43 per cent. of multiple cause deaths would have occurred if the physician's preference could then have been ascertained, and if that is so the corrected standardized death rate in 1924 would not have been more than 68 per million compared with about 76 in 1936. It would appear that the increase in the last decade cannot be entirely accounted for by increased mention of diabetes along with other causes combined with the high preference in selection, and an increasing incidence of the disease is probably occurring, prevented by modern treatment from enhancing the death rate at ages under 55 but not so prevented at later ages.

In Table LXII a comparison is made between the death rates at various ages under 65, and the proportionate mortality rates (per 10,000 deaths from all causes) at 65 and over, of males of each social class in 1921-23 and in 1930-32 and of married women whose husbands were in occupations allocated to each social class in 1930-32. Class I includes professional and allied occupations, Class III consists of skilled and Class V of unskilled workers, the other Classes being of intermediate grade.

For males at ages under 35 mortality was greatest in Classes I and II in 1921-23, but the gradient was reversed in 1930-32, mortality being greatest in Classes IV and V, this being probably due to a more complete use of insulin treatment in Classes I-III. At 35-45 Class I gave a low rate, but there was no important variation between the other Classes in 1930-32. Between 45 and 65 the more affluent classes returned much higher rates than the unskilled classes, as in 1921-23, and this was also true of the proportionate mortality rates at later ages.

Married women at ages 20–35 and 45–65 recorded lowest mortality for Classes I–II with no important variation between the other Classes, but at 35–45 there was no appreciable class variation and at ages over 65 there was a slight downward trend in proportionate mortality from Classes I–II to Class V. The contrasts between men and married women at ages over 45 are difficult of explanation and suggest that a more abundant dietary is not so important a factor in

Table LXII.—Diabetes Mortality at various ages of Males by social class in 1921–23 and 1930–32, and of Married Women by social class of husband in 1930–32.*

	Social Class	Mean annual death rate per million at ages				Standardized ratio of registered to calculated deaths at 35–65	Proportionate mortality per 10,000 deaths from all causes 65 and over
		20–	35–	45–	55–65		
<i>Males.</i> 1921–23	I	56	47	190	468	—	218
	II	65	80	193	551	—	157
	III	50	66	115	305	—	73
	V	45	66	89	214	—	51
	IV	48	52	107	145	—	35
1930–32	I	16	15	137	442	128	} 198 219
	II	27	40	136	574	160	
	III	25	43	91	315	97	
	IV	37	35	86	220	75	
	V	34	44	62	177	62	
<i>Married Women.</i> 1930–32	I–II	19	43	104	430	85	270
	III	26	43	125	549	104	253
	IV	22	37	147	568	109	249
	V	26	44	143	531	106	214

* Calculated from data given in the Registrar-General's Decennial Supplements for 1921 and 1931, Part II, Occupational Mortality. The standardized ratios at 35–65 are percentage ratios of the registered deaths to those calculated by applying the death rates at 35–, 45–, 55–65 of all males or all married women to the census populations in the specified social class.

increasing diabetes mortality amongst married women as amongst men, or else that its effects are counteracted by other factors peculiar to women. Comparison of the death rates of all married and all single women at separate ages in 1930–32 indicates that the married suffered lower mortalities at ages under 45 but at all later ages their rates were much higher.

Diabetes mean annual death rates per million living in 1930–32 at ages :—							
	20–	25–	35–	45–	55–	65–	70 up
Married women ..	18	26	42	126	516	1,077	1,375
Single women ..	23	35	56	94	240	413	655

60.—**Scurvy.**—During the decade 1927–36 a total of 180 deaths has been classed to this cause. The annual average during 1911–20 was 34, falling to 25 in 1921–30 and 16 in 1931–36. Table LXIII classifies the deaths since 1911 by sex and age. The age period of greatest incidence is the second half of the first year of life, at which age nearly half of the deaths now occur. Deaths of children at 1–5 years of age, which averaged 12 per annum in 1911–20 and

7 in 1921–30 now number only 2 or 3 per year. The excess of males amongst the deaths under 5, which was considerable during 1921–30, is no longer appreciable.

In the 5 years 1931–35, of 82 deaths registered, 25 were described as infantile scurvy, 16 as scurvy rickets and 1 as Barlow’s disease.

Table LXIII.—Scurvy: Deaths at various ages in 1911-20, 1921-30 and 1931-36.

Age period	Males			Females		
	1911-20	1921-30	1931-36	1911-20	1921-30	1931-36
Under 6 months..	24	} 65 {	6	21	} 48 {	6
6 months to 1 year	43		24	45		21
1-2 years ..	29	} 45 {	7	43	} 29 {	6
2-	23		3	27		2
5-	8	4	1	14	4	—
15-	5	4	1	4	1	—
25-	10	7	1	12	5	2
45-	12	16	2	7	8	4
65 and over ..	11	10	6	4	4	1
All ages ..	165	151	53	177	99	42

71(a). **Pernicious Anæmia.**—The progress of mortality since 1927 when a new and effective treatment came into use for this disease, is revealed in Table LXIV, where annual rates at various ages are expressed in terms of the corresponding rates in the triennium preceding 1927. The actual rates in greater detail of age in each year from 1922 to 1931 were shown in the Review for 1931, Table XLVIII. The standardized rates, which increased after the sudden fall registered in 1928, began to decline again in 1933 and have continued to fall each year since. The greatest relative decline in mortality has occurred at ages 25–65 for males and under 45 for females.

As in the case of diabetes, remedies are in general only effective in prolonging life so long as treatment is continued, and unless the patient eventually dies of some acute or general disease to which precedence is given in the classification of deaths due to joint causes, or without mention being made on the certificate of the pernicious anæmia, the expected effect on the mortality statistics would be a temporary reduction in annual deaths at each age, followed by a gradual return to the original total with a higher average age distribution. This assumes a constant incidence of new cases, whereas there is reason to believe that the number of recognised cases of pernicious anæmia and other blood diseases is increasing. The total deaths registered in the 11 years 1926 to 1936

have numbered 2,780, 2,655, 1,854, 1,955, 2,150, 2,226, 2,591, 2,428, 2,385, 2,360, 2,258 which indicates a return by 1932 almost to the 1927 level, and this suggests that any absolute reduction in the fatality of pernicious anæmia brought about by the new remedies was being balanced by an increased incidence or recognition of the disease. Since 1932, however, there has been a gradual decline in the total deaths.

Classification of multiple cause deaths according to the physician's choice of essential cause rather than by selective rules would reduce the total assigned to the pernicious anæmia group in 1936 from 2,258 to 1,992, or by 12 per cent.

Table LXIV.—Mortality from Pernicious Anæmia per Million living in 1931, 1932, 1933, 1934, 1935 and 1936 and per cent. of the rate for 1924–26 in each year 1927 to 1936.

		MALES.						FEMALES.					
		All Ages*	0–	25–	45–	65–	75 and up	All Ages*	0–	25–	45–	65–	75 and up
MORTALITY PER MILLION LIVING													
1931	..	34	3	13	98	311	301	43	5	27	134	328	231
1932	..	39	5	13	111	368	339	49	5	29	149	379	235
1933	..	35	3	13	104	317	322	46	4	30	130	367	326
1934	..	34	5	12	94	306	325	44	5	26	126	349	371
1935	..	32	5	10	82	329	339	43	5	25	114	353	387
1936	..	31	4	10	71	317	404	40	3	24	106	328	375
MORTALITY PER CENT. OF THAT IN 1924–26.													
1927	..	98	84	91	96	106	114	97	86	90	98	98	109
1928	..	65	102	59	55	77	92	67	77	56	64	78	91
1929	..	70	78	59	58	86	133	67	66	53	64	84	109
1930	..	76	74	69	71	85	121	72	45	63	68	84	138
1931	..	74	70	54	64	89	149	74	58	58	74	91	112
1932	..	85	106	53	72	106	167	84	56	61	83	106	162
1933	..	76	69	56	68	91	159	79	47	64	72	102	158
1934	..	74	98	49	61	88	161	76	59	55	70	97	180
1935	..	70	96	44	54	94	167	74	67	53	63	98	188
1936	..	67	89	44	46	91	199	69	43	51	59	91	182

* Standardized.

The international group No. 71a, with heading “ Pernicious Anæmia,” on which all these statistics are based, includes also aplastic, essential or hæmolytic anæmias, Addison’s anæmia and “ progressive ” or “ profound ” anæmias whose cause cannot be ascertained.

72 b(2). **Agranulocytosis (Agranulocytic Angina).**—The deaths attributed to this condition, alone or in association with other

causes, numbered 2 in 1930, 3 in 1931, 7 in 1932, 31 in 1933 and 39 in 1934, the classification being in a few instances to causes such as pulmonary tuberculosis or lobar pneumonia with agranulocytosis as a contributory or associated cause.

Pending a clearer definition of the disease as an established clinical entity, the deaths were classed until the end of 1934 to sub-groups 115(3) or 115(4) when it was described as angina, or with the unclassified anæmias in No. 71 *b*(2) when described as agranulocytosis. Since the two descriptions are now regarded as synonyms, the angina being secondary to the blood condition, and since the latter is not characterised by "anæmia" in the usually accepted meaning of the term but is generally regarded as an aleukæmia affecting the granular leucocytes, since 1935 a new subgroup to comprise both descriptions, with title No. 72 *b*(2) Aleukæmia (agranulocytosis) has been introduced into Tables 6, 21 and 23.

When other diseases are associated with agranulocytosis on a death certificate the same rules of precedence are now applied for assigning the death to its primary cause as for other defined blood diseases, and all the 82 deaths with mention of this cause which occurred during 1930–34, with one possible exception, would by these rules have been assigned to agranulocytosis as the principal cause. The complete record up to 1936 is given in Table LXV, and shows an increase to 52 deaths in 1935 and 62 in 1936.

Table LXV.—Deaths from Agranulocytosis by Sex and Age, in each year 1930 to 1936.

	1930.		1931.		1932.		1933.		1934.		1935.		1936.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0- ..	—	—	—	—	—	—	—	2	—	—	—	1	2	—
5- ..	—	—	—	—	—	—	—	2	—	—	1	2	4	—
15- ..	—	—	—	—	1	1	2	3	4	2	1	4	6	2
25- ..	—	1	—	1	—	—	—	2	1	5	1	—	2	1
35- ..	—	—	—	1	—	1	1	—	1	4	2	6	2	4
45- ..	—	1	1	—	1	1	1	7	2	3	3	8	5	8
55- ..	—	—	—	—	—	2	—	5	3	5	7	10	5	7
65- ..	—	—	—	—	—	—	1	4	1	6	—	5	3	9
75 and up..	—	—	—	—	—	—	—	1	1	1	1	—	—	2
All ages	—	2	1	2	2	5	5	26	13	26	16	36	29	33

Of the 196 deaths 66 were of males and 130 of females, the period of greatest incidence in proportion to the population living being at ages 65–75. In 1935 and 1936, 28 of the 114 deaths occurred in the

March quarters, 38 in the June quarters, 19 in the September quarters, and 29 in the December quarters (Table 23).

74. Other diseases of the Blood and Blood forming organs.—The deaths assigned to this group averaged 11 annually during 1921–25, 22 annually in 1926–30, 34 annually in 1931–35, and numbered 50 in 1936. During 1931–34 18 deaths from agranulocytosis were included, but these are now classed to No. 72 (*b*) (*see* p. 104). The remaining 150 deaths during 1931–35 were certified as follows:—polycythæmia (vera, rubra, splenomegalic or unqualified) 79 males and 50 females, Vaquez’s disease 6 males and 6 females, erythræmia 2 males and 2 females, erythrocythæmia 3 males, leukoblastic erythroderma 1 male, leucopenia 1 male.

75. Alcoholism.—This heading in the International List of causes of death excludes organic disease attributed to alcoholism, so, in order to obtain as complete information as possible with regard to mortality from over-indulgence in alcohol, all the deaths in certification of which any mention of alcohol appears are assembled in Table LXVII. These numbered 503 in 1936, compared with 523 in 1935 and 494 in 1934.

After 1926 the change in the form of the medical certificate produced a temporary disturbance, consisting, as Table LXVI indicates, in a sudden increase in deaths attributed to various causes with mention of alcoholism. Violent deaths with associated alcoholism were not so affected, but deaths attributed to heart

Table LXVI.—Deaths from or associated with Alcoholism ; Death-rate per Million from the Combined Causes and from Cirrhosis of Liver not returned as Alcoholic, 1921-1936.

			Number of Deaths.										Death rate per million persons.	
			Alcoholism No. 75.		Returned as connected with alcoholism.									
					Cirrhosis of liver 124 (a)		Heart diseases 90-95.		Violent deaths 163-198.		Other causes.		Returned as alcoholism or associated therewith.	Cirrhosis of liver not returned as alcoholic 124 (b).
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
1921	..	..	127	55	100	54	41	17	61	11	125	56	17	47
1922	..	..	117	47	103	47	41	14	52	16	125	59	16	46
1923	..	..	104	47	98	54	22	12	46	16	106	57	15	42
1924	..	..	94	33	90	57	36	8	44	7	120	53	14	42
1925	..	..	95	55	87	49	25	19	34	6	90	48	13	44
1926	..	..	76	39	82	50	31	20	36	17	90	58	13	44
1927	..	..	84	24	162	101	40	22	37	14	176	92	19	41
1928	..	..	74	34	210	110	54	34	30	10	205	102	22	40
1929	..	..	85	49	175	83	69	38	41	11	206	75	21	38
1930	..	..	49	45	144	71	46	25	35	10	147	75	16	36
1931	..	..	40	41	162	99	45	35	24	2	136	45	16	34
1932	..	..	61	34	115	62	42	19	18	4	99	45	12	32
1933	..	..	43	30	115	77	52	19	24	10	79	35	12	26
1934	..	..	33	19	125	84	38	22	17	9	97	50	12	28
1935	..	..	50	23	139	62	46	30	17	8	91	57	13	28
1936	..	..	32	27	133	64	48	26	22	4	96	51	12	26

Table LXVII.—Deaths from or connected with Alcoholism, 1936.

	All Ages.		Under 25		25—		35—		45—		55—		65—		75—	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
75. Deaths attributed solely to alcoholism	32	27	—	—	1	2	5	4	8	5	12	5	5	11	1	—
Deaths attributed to other causes in conjunction with alcoholism—																
11. Influenza	3	—	—	—	—	—	1	—	1	—	1	—	—	—	—	—
23. Tuberculosis of the respiratory system	4	1	—	—	—	—	1	—	—	—	2	1	1	—	—	—
34. Syphilis	3	1	—	—	—	—	—	—	1	1	—	—	—	—	2	—
36. Septicæmia	1	—	—	—	—	—	—	—	2	—	3	2	—	—	—	2
45-53. Cancer	6	4	—	—	—	—	1	—	—	1	—	—	—	—	—	—
54 (a) Mediastinal lipoma	—	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—
57. Osteo-arthritis	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
58. Gout	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
59. Diabetes	1	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—
69. Fatty degeneration of liver	—	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—
70 (a) Purpura	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
72 (b) Hodgkins disease	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—
82 (a) Cerebral hæmorrhage, apoplexy, etc.	3	2	—	—	—	—	2	—	—	—	1	2	—	—	—	—
82 (c) Hemiplegia	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
85. Epilepsy	4	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
87 (b) Neuritis	2	5	—	—	1	—	—	—	—	2	—	2	1	1	—	—
87 (e) Neurasthenia	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
90. Pericarditis	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
92. Valvular disease of heart	7	2	—	—	—	—	1	1	1	—	2	—	2	1	1	—
93 (a) Acute myocarditis	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
93 (b 1) Fatty heart	9	2	—	—	—	—	—	—	3	2	3	—	3	—	—	—
93 (b 2) Cardio vascular degeneration	3	1	—	—	—	—	—	—	2	—	—	1	1	—	—	—
93 (b 3) Other or unspecified myocardial disease	18	11	—	—	3	—	1	1	8	4	3	2	2	3	1	1
93 (c) Myocarditis not distinguished as acute or chronic	6	8	—	—	—	—	1	—	2	—	1	5	2	1	—	2
94. Diseases of coronary arteries	2	2	—	—	—	—	1	—	—	1	1	1	—	—	—	—
95 (b:2) Heart disease (undefined)	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
97. Arteriosclerosis	4	6	—	—	—	—	—	—	—	1	—	1	3	4	1	—
98. Gangrene	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	1
100 (1) Varicose Ulcer	—	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—
102. Essential Hypertension	1	—	—	—	—	—	—	—	1	—	1	—	2	1	—	1
106. Bronchitis	3	3	—	—	—	—	—	—	2	—	1	2	1	1	1	—
107. Broncho-pneumonia	10	3	—	—	—	—	6	—	6	1	4	1	1	2	—	1
108. Lobar pneumonia	14	5	—	—	—	—	3	—	1	—	—	—	—	—	—	—
110 (2) Other Pleurisy	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
111 (1) Hypostatic congestion of lungs	2	1	—	—	—	—	—	—	1	1	1	—	—	—	—	—
115 (3) Streptococcal infection of throat	1	—	—	—	—	—	1	—	—	—	—	—	1	1	—	—
117 (a) Gastric Ulcer	4	1	—	—	—	—	—	—	1	—	2	—	—	—	—	—
117 (b) Ulcer of Duodenum	3	—	—	—	—	—	—	—	2	—	1	—	—	—	—	—
118 (1) Inflammation of stomach	4	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
119 & 120 (a) (2) Other diarrhoea and enteritis	2	3	—	—	—	—	—	—	—	1	—	—	1	1	1	1
123 (3) Anal fistula	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
125 (1) Acute yellow atrophy of liver	1	1	—	—	—	—	1	—	—	—	1	—	—	—	—	—
125 (2) Cholæmia	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
128. Acute pancreatitis	—	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—
124 (a) Cirrhosis of liver	133	64	—	—	2	—	14	4	32	22	54	18	25	16	6	4
131. Chronic Nephritis	10	4	—	—	—	—	2	—	2	1	3	3	3	—	—	—
132. Nephritis not stated acute or chronic	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
133. Pyelonephritis	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
137. Adenoma of Prostate	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
153. Ulcer	—	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
156. Diseases of the joints—																
Infective Arthritis	1	1	—	—	—	—	—	—	2	1	—	—	1	—	—	—
163-171 Suicide	2	1	—	—	—	—	—	—	4	1	3	—	2	1	—	—
186 (pt.) Injury by fall	9	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
186 (pt.) Injury by crushing (vehicles, railway, etc.)	2	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
Other violence	9	1	—	—	2	—	1	—	3	—	—	1	1	—	—	—
TOTAL	331	172	—	—	10	4	45	10	96	48	107	52	59	45	14	13

diseases with mention of alcoholism increased from 51 in 1926 to 107 in 1929, and have since fluctuated between 60 and 80. The death-rate per million due to cirrhosis of the liver with mention of alcohol increased from 3 in 1926 to 8 in 1928, and has since fallen to 5 (Table 7), and the rate for cirrhosis without mention of alcohol has declined from 44 in 1926 to 26. Deaths attributed to causes other than violence, heart disease or cirrhosis of the liver, with mention of alcoholism, increased from 114 in 1933 to 148 in 1935 and numbered 147 in 1936.

The number of deaths attributed solely to alcoholism without mention of other causes, 59, is below the average of the preceding 5 years (75).

88. Diseases of the Eye and Annexa.—Deaths assigned to this group number about 90 annually. In 1926–30 the annual average was 81, in 1931–35 it was 85, and in 1936 the number was 96. It is sometimes objected that diseases of the eye, apart from malignant tumours, which are classed to cancer, rarely cause death and that such a group belongs more properly to a list of diseases than of causes of death. It must be remembered, however, that in the first place septic infections, with resulting fatal complications, occur in the orbit as in other parts of the body and are classed to this group, and in the second place operations performed upon the eye sometimes result in death owing to anæsthetic accidents or complications, such deaths being classified to the disease which necessitated the operation in accordance with the general rule regarding all accidents resulting from medical or surgical treatment.

Table LXVIII classifies the 425 deaths which were assigned to this group during 1931–35 according to the disease which resulted, either through complications or through medical or surgical accidents, in a fatal termination. The largest group, responsible for 164 deaths, was cellulitis or abscess of the eye or orbit, these being distributed over all ages. Infections of the conjunctiva, eyelids and lachrymal duct were also mentioned as the initial cause of 37 deaths of which 23 were of children under 15. Cataract, presumably as a result of operative shock, anæsthetic accidents or complications following an operation, was the initial cause of 110 deaths, and glaucoma of 64. This analysis suggests that septic infections of the eye and orbit account for about half of the deaths in this group and operative accidents for most of the remainder.

90–103. Diseases of the Circulatory System.—The deaths assigned to *heart diseases* including coronary disease (Nos. 90–95) in 1936 numbered 126,584—61,762 of males and 64,822 of females. These numbers are equivalent to crude death-rates per million of 3,153 for males and 3,051 for females. When standardized, the revised rates are considerably reduced to 2,118 for males and 1,700 for females, but still remain in this form the highest yet recorded (Table 8).

As pointed out in previous Reviews the recent increase of crude mortality (Table 7) from heart diseases is due, among other causes, to the increasing age of the population and to more frequent record of myocardial degeneration in certification of the deaths of old people. The introduction of the new form of death certificate since 1926 has led to more frequent statement of this or other forms of heart disease as a subsidiary cause, and by the operation of the rules of selection of joint causes this often results in the death being transferred to the heart group as a consequence.

Table LXVIII.—Diseases of the Eye and Annexa: Deaths at various ages, according to cause or disease necessitating operation, 1931-35.

	Males				Females			
	All ages	0—	15—	45 and over	All ages	0—	15—	45 and over
Cellulitis or abscess of eye or orbit ..	89	28	29	32	75	27	18	30
Conjunctivitis, ophthalmia, blepharitis, dacryocystitis	14	10	2	2	23	13	6	4
Cataract ..	51	2	—	49	59	1	1	57
Glaucoma ..	21	—	—	21	43	—	—	43
Corneal ulcer, keratitis ..	6	3	1	2	8	1	—	7
Iritis, synechia ..	3	—	—	3	5	1	1	3
Optic neuritis, retinitis ..	7	2	1	4	5	2	2	1
Other conditions	7	3	—	4	9	5	—	4
Total ..	198	48	33	117	227	50	28	149

The dual classification in 1936 showed that assignment of deaths according to the physician's selection of the essential cause rather than by the application of the selective rules (as set out in the Manual of the International List) would reduce the deaths of males classed to heart diseases as a whole from 61,762 to 47,918, or by 22·4 per cent. and those of females from 64,822 to 51,055 or by 21·2 per cent. The degree of overstatement of death rates at all ages from separate groups of heart diseases which results from the operation of the selective rules is shown in Table LXIX by comparing the tabulated figures with those which would have resulted from selection in accordance with the order of statement of multiple causes as written on death certificates.

Mortality assigned to heart diseases other than myocarditis or angina pectoris is, when judged on this basis, overstated by 4 to 13 per

cent. Mortality assigned to myocarditis or myocardial degeneration (excluding fatty heart and cardiovascular degeneration) is, however, overstated through the operation of the selective rules by 40 to 50 per cent. of the smaller figure, and mortality from coronary disease and angina pectoris is overstated to a similar degree. Deaths assigned to cardiovascular degeneration are overstated by about 5 per cent., and the same is true for arteriosclerosis, evidenced by or mentioned in association with cerebral hæmorrhage. On the other hand deaths

Table LXIX.—Diseases of Heart and Circulation: Effects of Classification in accordance with Physician's preference where multiple causes were certified, 1936.

International group to which death is classified.	Selection by rule (tabulated figures for 1936).		Selection by physician's preference as expressed on certificate		Excess (or defect) of first over second, per cent. of second figure	
	Males	Females	Males	Females	Males	Females
90. Pericarditis	265	187	252	179	5	4
91. Acute endocarditis	609	639	560	592	9	8
92. Chronic endocarditis, valvular disease	10,119	12,494	8,982	11,286	13	11
95. Diseases of heart not included in Nos. 90-94	3,272	3,983	2,905	3,598	13	11
93 (b) (1) Fatty heart	852	1,181	821	1,113	4	6
<i>"Myocarditis" group (without arteriosclerosis:—</i>						
93 (a) Acute myocarditis	147	127	91	93	62	37
93 (b) (3) Myocardial degeneration, chronic myocarditis	20,730	25,032	14,314	17,752	45	41
93 (c) Myocarditis not distinguished as acute or chronic	7,349	7,893	4,716	5,258	56	50
<i>Angina pectoris group.</i>						
94. Coronary disease, angina pectoris	9,459	4,636	6,644	2,979	42	56
<i>Myocardial degeneration with mention of vascular sclerosis.</i>						
93 (b) (2) Cardio-vascular degeneration ..	8,960	8,650	8,633	8,205	4	5
<i>Other vascular sclerosis, hyperpiesis.</i>						
97 (3) Arteriosclerosis without cerebral vascular lesion	4,868	4,116	6,072	4,563	—20	—10
97 (1) (2) Arteriosclerosis with cerebral vascular lesion	7,062	7,627	6,963	7,429	5	6
82. Cerebral vascular lesions (without mention of arteriosclerosis)	11,781	15,818	11,043	14,758		
102. High blood pressure*	379	306	2,351	2,664	—84	—89

* Analysis of a sample of 1,505 deaths classed to No. 102 Abnormalities of Blood Pressure during 1931-35 showed that 762 were attributed to "hyperpiesis," 324 to "hyperpiesia," 258 to "high blood pressure," 161 to "arterial hypertension," that is to say, the whole group consists of deaths attributed to high blood pressure or its synonyms.

for which arteriosclerosis (without cerebral hæmorrhage) or high blood pressure were primary causes in the physician's opinion are greatly understated by the operation of the selective rules, a good deal of transfer from arteriosclerosis to coronary disease and from high blood pressure to arteriosclerosis being occasioned by these rules. Hence the groups of cardiovascular and degenerative vascular diseases taken as a whole would not be appreciably affected by basing selection upon the physician's preference (the total deaths being reduced from 83,662 to 82,304, or by less than 2 per cent.) but the myocarditis group (without mention of vascular changes) would be greatly diminished. The changes which have occurred in

mortality from rheumatic heart disease, pericarditis and endocarditis have been discussed on page 95. Table LXX shows the trend of the standardized death rate for each sex from (1) heart disease as a whole, (2) the "myocarditis" group of Table LXIX, (3) coronary disease or angina pectoris, and (4) the other cardiovascular and degenerative arterial diseases shown in Table LXIX. The component death rates making up the last group were shown for the years up to 1935 on page 113 of the Review for 1935.*

Table LXX.—Standardized death rates per million living from heart and degenerative vascular diseases, at triennial intervals from 1925 to 1934, and in each year since. Also mortality per cent. of that in 1925.

		Males				Females			
		All heart disease	Myocarditis group	Coronary disease, angina pectoris	Other cardiovascular and arterio sclerosis, etc.	All heart disease	Myocarditis group	Coronary disease, angina pectoris	Other cardiovascular and arterio sclerosis, etc.
		(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
1925	..	1,322	398	55	1,054	1,220	351	19	827
1928	..	1,474	579	100	1,064	1,349	509	34	837
1931	..	1,845	757	168	1,067	1,592	676	59	843
1934	..	1,897	807	248	1,058	1,565	715	94	848
1935	..	1,949	841	279	1,060	1,597	737	107	871
1936	..	2,118	959	314	1,109	1,700	824	118	910

Rates for subsequent years per cent. of those in 1925.

1928	..	111	145	182	101	111	145	179	101
1931	..	140	190	305	101	130	193	311	102
1934	..	143	203	451	100	128	204	495	103
1935	..	147	211	507	101	131	210	563	105
1936	..	160	241	571	105	139	235	621	110

The standardized death rate from heart disease as a whole has increased since 1925 by 60 per cent. for males and by 39 per cent. for females, but this increase is chiefly due to deaths assigned to myocarditis and angina pectoris. For the *myocarditis* group of Table LXIX the increase has exceeded 130 per cent. for each sex. The frequency with which myocarditis is mentioned in conjunction with other causes of death has been ascertained from two samples of death certificates taken from the years 1926 and 1934, which relate to the more comprehensive group of diseases of the myocardium, including fatty heart and "cardiovascular degeneration" (Nos. 88 (3), 90 (5)

* The rates for the second group for 1925 and 1928 are obtained by deducting the estimated rates for No. 93b (2) in the table on page 113 of the Review for 1935 from the total of the two numbers 90(7) and 88(3) of the 1921 list.

and 90 (7) of 1921 List in 1926, and No. 93 of the present list in 1934). These are compared below :—

	1926	1934	1934 Per cent. of 1926
No. of deaths assigned to diseases of myocardium in sample	5,094	1,485	
No. of these without mention of any other cause ..	2,876	626	
No. with mention of one or more associated causes	2,218	859	
Percentage with an associated cause	43·5	57·8	
Total deaths assigned to diseases of myocardium in year	25,477	66,036	259
Estimated number in year without mention of any other cause	14,395	27,867	194
Estimated number in year with mention of an associated cause	11,082	38,169	344
Estimated additional number of deaths assigned to other causes, with mention of disease of myocardium as an associated cause	10,099		

There were in 1926 some 21,200 certificates with mention of myocardial disease in conjunction with another cause of death, of which about half were classified by the selective rules to myocardial disease and the rest to the associated causes. In addition there were estimated to be about 14,400 deaths attributed to myocardial disease alone. Of the total deaths classed to myocardial disease 43·5 per cent. had mention of some associated cause in 1926, but by 1934 the proportion had increased to 57·8 per cent.

It is also apparent that the number of deaths attributed to myocardial disease without mention of any other cause increased between 1926 and 1934 by 94 per cent., whereas the number assigned to myocardial disease in association with some other cause increased by 244 per cent. Part of these increases were due to growth of the population at risk, the number living at ages over 55 having increased by about 22 per cent. in the interval, but, allowing for this, the certification of myocardial disease by itself must have increased by about two-thirds during the 8 years, whilst certification of myocardial disease in conjunction with other causes must have increased threefold. A further increase since 1934 in the practice of certifying myocarditis as a contributory cause of death is indicated by the following comparison :—

	1934	1936
Total deaths assigned to diseases of myocardium (No. 93)	66,036	80,921
Per cent. of these with an associated cause <i>preferred by physician</i>	22·4	31·0
Estimated number of deaths classed to No. 93 with an associated cause <i>preferred by physician</i> ..	14,792	25,085

It is evident that in the presence of such rapid changes in the frequency of mention of myocarditis as a contributory cause the use of rigid selective rules can only lead to a distorted view of the

statistics. On the other hand a system of rules ceases to be of value if it has to be varied to meet circumstances, and the present position with regard to myocarditis will only be met satisfactorily when classification is based upon the physician's selection, as will be the case from 1941 onwards. The mention of diseases of the myocardium as a subsidiary cause on 25,085 certificates has probably in many instances no more significance than the mention of "heart failure," which is dealt with as a mode of dying rather than as a disease (being classed to No. 200 amongst ill-defined causes).

The cause most frequently associated with myocarditis on death certificates is bronchitis, over which heart diseases are preferred by the selective rules. In the sample of 5,094 deaths classed to myocardial disease in 1926, referred to above, bronchitis was found to be mentioned on 1,045 or 20·5 per cent. of the certificates, the percentages at successive ages being 20·3 at 25-45, 21·4 at 45-55, 21·9 at 55-65, 20·9 at 65-75 and 19·6 at 75 upwards.* In the 1934 sample of 1,485 death certificates it was found that on 223, or 15 per cent., bronchitis was mentioned and preferred by the physician over the myocardial disease. This combination with bronchitis is responsible for much of the present overstatement of heart disease mortality and also in large part for the corresponding understatement of bronchitis mortality shown below:—

Mode of Classification, 1936	Heart diseases. (Nos. 90-95)		Bronchitis. (No. 106)	
Selective rules (tabulated figures)	126,584	17,600
Physician's preference	98,973	32,724
Excess or defect by use of rules	27,611	— 15,124

The progressive rise since 1920, commented on in previous Reviews, in the standardized mortality assigned to *angina pectoris*, and to diseases of the coronary arteries, No. 94, continued in 1936. For males this rate has risen from 32 in 1920 to 314, and for females from 13 to 118, and since 1928 the increase amounts to 214 per cent. for males and 247 per cent. for females (Table LXX). As is the case for other heart diseases, when *angina pectoris* is mentioned in association with other chronic diseases, such as bronchitis or arteriosclerosis, the selective rules often give precedence to *angina*, although the certifying physician considers it to be only a terminal or contributory cause. Table LXIX shows that in 1936 the "overstatement" produced by the rules amounted to no less than 4,472 deaths, or 46 per cent. of the number which would have been classed to No. 94 by selection in accordance with the physician's preference.

* In 1932 there were 32,427 deaths classed to No. 93b (3) myocardial degeneration or chronic myocarditis, and bronchitis was mentioned as an associated cause on 5,705 or 17·6 per cent. of the certificates, the proportions being 18·0 per cent. at 25-45, 20·7 at 45-55, 22·3 at 55-65, 19·3 at 65-75, 15·0 at 75 upwards. For the remainder of group 93 the proportions would be higher.

The standardized rate of mortality classed to other *cardio-vascular degeneration*, *arterio-sclerosis*, cerebral vascular lesions and abnormalities of blood pressure (comprising only hyperpiesis) is shown for various years since 1925 in Table LXX. Chronic interstitial nephritis mortality with mention of arterio-sclerosis has not been added since these deaths are not separated from other chronic nephritis in No. 131. The total rate for this group of diseases has increased only slightly since 1925, and, as stated on page 110, the group as a whole is little affected by the operation of the selective rules, though some of its small components are greatly affected.

Aneurysm mortality as a whole has been dealt with along with syphilis on page 78. Table LXXI gives a classification by sex and age.

Table LXXI.—Aneurysm. Deaths at various ages according to site of aneurysm, 1935.

Site of aneurysm.	Males						Females					
	All ages	0–	25–	45–	55–	65 and over	All ages	0–	25–	45–	55–	65 and over
Aorta	756	4	42	154	280	276	284	—	18	37	79	150
Innominate or carotid artery	7	—	—	2	3	2	8	1	—	1	4	2
Arteries of brain (intracranial)	120	29	45	24	11	11	129	23	33	29	24	20
Subclavian, axillary, brachial arteries	6	—	1	—	2	3	1	—	—	—	—	1
Coronary artery	2	—	—	—	1	1	4	—	—	2	—	2
Iliac or gluteal arteries ..	6	—	—	1	2	3	—	—	—	—	—	—
Femoral, popliteal, tibial arteries	15	—	3	—	3	9	—	—	—	—	—	—
Aneurysm of veins	5	1	1	1	1	1	—	—	—	—	—	—
Other specified sites	9	—	2	—	1	6	6	—	—	1	1	4
"Congenital" aneurysm ..	6	3	2	1	—	—	4	3	1	—	—	—
"Aneurysm" (unqualified) ..	50	2	3	9	15	21	23	2	5	4	6	6
Total	982	39	99	192	319	333	459	29	57	74	114	185

of the deaths classed to this group in 1935 according to the site of the aneurysm. At ages under 25, of the 58 deaths from aneurysms of specified site, 52 resulted from intracranial and only 4 from aortic aneurysm. At 25–45, out of 145 deaths 78 were due to intracranial and 60 to aortic aneurysm. At 45–65, out of 486 deaths of males from aneurysms of specified site 89 per cent. were from aortic and 7 per cent. from intracranial aneurysm, whereas out of 178 deaths of females 65 per cent. were from aortic and 30 per cent. from intracranial aneurysm. At all ages combined 82 per cent. of the aneurysms of specified site were aortic amongst males, compared with 66 per cent. amongst females, the proportions of intracranial aneurysms being 13 and 30 per cent. respectively.

125–127. Diseases of the Liver and Gall Bladder (except cirrhosis and tumours).—In addition to the 1,265 deaths classed to cirrhosis of the liver in 1936 119 were classed to acute yellow

atrophy and 144 to other diseases of the liver. The annual deaths since 1921 from these causes have been as follows :—

			Acute yellow atrophy of liver		Other diseases of liver (not cirrhosis or tumours).	
			Males	Females	Males	Females
Mean annual deaths	1921-25	..	22	56	147	125
	1926-30	..	19	62	106	91
	1931-33	..	23	50	78	67
Annual deaths	1934	..	24	58	75	61
	1935	..	27	76	64	62
	1936	..	32	87	73	71

The annual deaths attributed to acute yellow atrophy changed little between 1921 and 1933, but have increased each year since, the deaths of females having risen from 48 in 1932 to 87 in 1936. The comparative figures for females at different ages since 1932, separating the deaths associated with pregnancy from the remainder, are shown below :—

		All ages	0—	15—	25—	35—	45—	65 up
<i>Without record of associated pregnancy.</i>								
1932	..	21	2	3	3	1	8	4
1933	..	20	3	4	5	3	5	—
1934	..	26	3	1	9	5	6	2
1935	..	37	6	6	10	2	11	2
1936	..	34	5	—	6	3	17	3
<i>With associated pregnancy.</i>								
1932	..	27	—	6	14	7	—	—
1933	..	34	—	10	14	10	—	—
1934	..	32	—	5	16	11	—	—
1935	..	39	—	7	24	7	1	—
1936	..	53	—	13	28	11	1	—

Most of the recent increase has occurred at ages 25-35 when associated with childbearing and at ages 45-65 amongst other women. It was pointed out in the Reviews for 1933 (page 109) and 1934 (page 117) that on a considerable proportion of death certificates acute yellow atrophy is not merely mentioned in association with, but is stated by the physician to be consequent upon, pregnancy or parturition. With the present arrangement of the International List of Causes, however, and until icterus gravis gravidarum is admitted to the list of toxæmias of pregnancy, "acute yellow atrophy due to pregnancy" must remain assigned to No. 125 (1) even in the alternative classification according to the physician's preference as carried out for 1936, for pregnancy cannot be regarded as a "disease" to take precedence over the liver affection. In Table LXXV, therefore,

the 53 deaths classed to No. 125 (1) with associated childbearing are only reduced to 52 by the alternative method of classification.

The deaths classed to diseases of the liver, gall bladder and ducts, excluding tumours, cirrhosis or gall stones, are analysed in detail of disease and age for the year 1935 in Table LXXII. Infections of the liver were the cause of 42 deaths of males and 32 of females, and cholecystitis without record of gall stones was the assigned cause of 348 deaths of males and 863 of females, these being the highest numbers recorded in any year. In addition, catarrhal jaundice described as epidemic

Table LXXII.—Diseases of the Liver, Gall Bladder and Ducts (except cirrhosis, gall stones and tumours). Deaths by cause, sex and age, 1935.

List No.	Description of disease		All ages	0—	5—	25—	45—	65 and over
125 (1)	Acute yellow atrophy of liver, and synonyms.	{ M. F.	27 76	1 3	3 16	9 43	8 12	6 2
125 (2)	Abscess, suppurative hepatitis ..	{ M. F.	19 15	— —	1 2	9 4	7 7	2 2
	Hepatitis (acute, subacute, infective, unqualified).	{ M. F.	17 15	— 1	2 —	3 1	7 10	5 3
	Pylephlebitis, portal pyæmia ..	{ M. F.	6 2	— —	1 —	1 —	4 1	— 1
	Perihepatitis	{ M. F.	3 1	— 1	— —	— —	2 —	1 —
	Enlargement, congestion ..	{ M. F.	7 10	1 —	— —	— —	1 4	5 6
	Jaundice (unqualified)	{ M. F.	10 14	3 1	— 2	2 4	2 5	3 2
	Hepatomegalia glycogenica, hepatic inadequacy.	{ M. F.	1 1	1 1	— —	— —	— —	— —
	Others classed to 125 (2) ..	{ M. F.	1 4	— —	1 —	— 1	— 2	— 1
127 (1)	Cholecystitis without record of gall stones.	{ M. F.	348 863	— 1	2 4	19 42	123 301	204 515
127 (2)	“Epidemic” or “infective” catarrhal jaundice.	{ M. F.	3 1	1 —	1 1	— —	1 —	— —
	Catarrhal jaundice (unqualified)	{ M. F.	36 22	4 4	1 4	6 2	11 4	14 8
	Obstructive jaundice	{ M. F.	3 2	— —	— —	— —	— —	3 2
	Obstruction or stricture of bile ducts.	{ M. F.	2 6	— —	— —	— 1	1 5	1 —
	Gangrene of gall bladder ..	{ M. F.	3 1	— —	— —	— 1	1 —	2 —
	Others classed to 127 (2) ..	{ M. F.	2 4	— —	— —	— 1	1 3	1 —

or infective was the stated cause of 4 and catarrhal jaundice (unqualified) of 58 deaths. Amongst children under 5 there were 26 deaths in all classed to diseases of the liver and gall bladder, including 3 deaths attributed to “cirrhosis” of the liver and, therefore, classed to No. 124. The trend of mortality from liver affections of obscure origin needs to be watched in view of the large number of new chemical and other substances which are being employed in therapeutics, some of which may have unsuspected toxic action upon the liver. The annual total deaths from liver and gall bladder diseases (Nos. 124–127) amongst children under 5 and at 5–15 years of age, and the standardized death rates at all ages from liver and gall

bladder diseases excluding cirrhosis and gall stones, are given below for each triennium from 1921 to 1932 (average annual figures) and for each year since.

	Annual deaths from all liver and gall bladder diseases. Nos. 124-127.		S.D.R. per million, at all ages. Nos. 125 and 127.	
	Ages under 5	Ages 5-15	Males	Females
1921-23	53	35	18	21
1924-26	50	34	20	24
1927-29	29	28	17	24
1930-32	21	24	18	27
1933	16	20	17	28
1934	16	23	17	29
1935	26	17	18	31
1936	23	20	17	31

133. Diseases of the Kidney other than Nephritis.—The deaths from kidney diseases, excluding nephritis and tumours, numbered 537 of males and 644 of females in 1936, the crude death rate of 29 per million persons reaching the highest level yet recorded. This rate remained at 13 or 14 from 1911 to 1920, rose to 21 in 1927-29, to 26 in 1932 and to 29 in 1936. The trend of death rates since 1921 at various ages from pyelitis and other diseases included in this group is shown below.

	Average crude death rates per million		Mean annual death rates from combined causes per million living at ages :—				
	Pyelitis	Other	0-	5 -	25-	45-	65 and over
<i>Males.</i> 1921-25	12	6	11	3	10	32	104
1926-30	13	7	16	3	11	31	101
1931-35	16	6	30	4	12	38	107
1936	19	8	54	5	13	36	137
<i>Females</i> 1921-25	11	5	9	3	12	29	64
1926-30	16	6	22	4	14	37	84
1931-35	20	7	38	4	15	43	102
1936	23	8	49	5	17	45	110

The most rapid increase has occurred amongst children under 5 whose mortality was five times as great in 1936 as in 1921-25. Adult males show only slight increases but the rates for females at ages over 45 have increased progressively and considerably.

Analysis of the deaths classed to this group during 1935, according to age and cause, as given in Table LXXIII, shows that there were 170 deaths attributed to polycystic disease, of which 26 occurred at ages under 25 (19 being described as “congenital”), 38 at 25–45 (13 “congenital”), 90 at 45–65 (29 “congenital”), and 16 at 65 upwards (4 “congenital”). Although a larger proportion of these deaths were described as congenital in early life, no significance can be attached to the omission of this adjective in the certification of polycystic disease of the kidneys.

Table LXXIII.—Diseases of the Kidney (except nephritis and tumours). Deaths by cause, sex and age, 1935.

List No.	Description of disease	All ages	0–	5–	25–	45–	55–	65–	75 and over
133 (a)	Pyelitis { M. F.	327 450	35 49	18 21	41 77	37 63	65 75	76 93	55 72
133 (b)	Polycystic disease described as “congenital” { M. F.	35 30	9 5	3 2	9 4	10 12	3 4	— 2	1 1
	Polycystic or cystic disease (un-qualified) { M. F.	43 62	— 3	3 1	10 15	14 19	10 18	4 3	2 3
	Hydronephrosis { M. F.	36 29	1 —	3 —	9 10	4 4	10 7	5 5	4 3
	Abscess of kidney { M. F.	9 9	1 1	1 1	2 1	— 4	3 2	2 —	— —
	Hæmorrhage, hæmaturia { M. F.	6 6	1 —	— 1	— —	— —	— 1	4 —	1 4
	“Renal insufficiency” { M. F.	4 11	— —	— 1	1 —	— 1	1 4	2 4	— 1
	“Bacilluria” { M. F.	1 9	— —	— 1	— —	1 —	— 1	— 6	— 1
	Nephroptosis or synonyms { M. F.	— 4	— —	— —	— —	— —	— 1	— 2	— 1
	Others classed to 133 (b) { M. F.	14 8	— —	— 1	4 2	1 2	4 —	3 —	2 3

140–150. Maternal Mortality.—Deaths and their Classification. The number of deaths assigned to diseases of pregnancy, childbirth and the puerperal state was 2,301 (Tables 6, 21 and LXXIV), of which 310 or 13·5 per cent. were assigned to abortion, 71 or 3·1 per cent. to ectopic gestation, and the remainder to other diseases and accidents arising from pregnancy and childbirth.

In addition 73 deaths from criminal abortion were assigned to various forms of violence, *e.g.*, suicide, murder, etc., in accordance with the verdicts recorded by the coroners’ juries (Tables 25 and LXXVII), and 668 deaths of pregnant or parturient women who suffered from various non-puerperal diseases (Table LXXV) were classified to those diseases. The assignment of deaths with mention of pregnancy or childbearing, to the maternal cause on the one hand or to the associated cause on the other, is carried out in accordance with rules of precedence outlined in the Manual of the International List of Causes of Death.

It should be remembered that the 668 deaths defined by this process as “not classed to pregnancy or childbearing but returned as associated therewith,” resulted in large part from risks to which the general population of women was exposed and a large proportion

Table LXXIV.—Deaths of Women classed to Pregnancy and Childbearing, 1936.

Cause of Death.	All Ages	Civil Condition.			Ages.						
		Single.	Married.	Widowed.	15—	20—	25—	30—	35—	40—	45 and upwards
140. Post abortive sepsis	241	27	211	3	4	31	65	65	57	16	3
Single	—	27	—	—	2	8	8	7	2	—	—
Married	—	—	211	—	2	23	56	58	53	16	3
Widowed	—	—	—	3	—	—	1	—	2	—	—
Tetanus	1	—	1	—	—	—	1	—	—	—	—
Streptococcal infection ..	12	2	10	—	—	1	6	1	2	1	1
Pneumococcal infection ..	2	—	2	—	—	—	2	—	—	—	—
Staphylococcal infection ..	2	—	2	—	—	—	—	—	2	—	—
Bacillus coli infection ..	1	—	1	—	—	—	1	—	—	—	—
Bacillus Welchii infection	1	—	1	—	—	—	—	—	1	—	—
Septic phlegmasia alba dolens, phlebitis, thrombosis	3	1	2	—	—	—	—	—	2	1	—
Septic pneumonia	8	—	8	—	—	—	4	3	—	1	—
Septic endocarditis	6	1	5	—	—	1	1	3	1	—	—
Septicæmia	85	11	73	1	—	11	24	25	18	5	2
Sepsis	21	3	17	1	1	3	2	10	4	1	—
Septic intoxication, sepræmia.	8	1	7	—	—	2	1	1	4	—	—
Pelvic peritonitis	4	1	3	—	—	1	—	1	1	1	—
Peritonitis	33	1	31	1	1	5	11	5	8	3	—
Salpingitis	4	1	3	—	—	2	1	—	—	1	—
Metritis	3	2	1	—	—	—	2	1	—	—	—
Endometritis	14	1	13	—	—	3	2	6	3	—	—
Parametritis	3	—	3	—	—	—	—	—	3	—	—
Erysipelas	1	—	1	—	—	—	—	1	—	—	—
Pyæmia	14	—	14	—	—	1	5	5	3	—	—
Pelvic cellulitis	7	1	6	—	—	—	2	1	3	1	—
Cellulitis	1	—	1	—	—	—	—	—	—	1	—
Pelvic abscess	4	—	4	—	1	1	—	1	1	—	—
“Puerperal fever”	3	1	2	—	1	—	—	1	1	—	—
141. Abortion not returned as septic	69	2	66	1	—	4	12	23	20	9	1
Single	—	2	—	—	—	1	—	1	—	—	—
Married	—	—	66	—	—	3	12	22	19	9	1
Widowed	—	—	—	1	—	—	—	—	1	—	—
(1) Hæmorrhage following abortion.	56	2	53	1	—	4	8	18	18	7	1
Single	—	2	—	—	—	1	—	1	—	—	—
Married	—	—	53	—	—	3	8	17	17	7	1
Widowed	—	—	—	1	—	—	—	—	1	—	—
(2) Without record of hæmorrhage.	13	—	13	—	—	—	4	5	2	2	—
Single	—	—	—	—	—	—	—	—	—	—	—
Married	—	—	13	—	—	—	4	5	2	2	—
Widowed	—	—	—	—	—	—	—	—	—	—	—
142. Ectopic gestation	71	4	66	1	2	4	16	21	18	9	1
Single	—	4	—	—	—	2	2	—	—	—	—
Married	—	—	66	—	2	2	14	21	17	9	1
Widowed	—	—	—	1	—	—	—	—	1	—	—
143. Other accidents of pregnancy ..	16	1	15	—	—	—	7	1	5	1	2
Single	—	1	—	—	—	—	—	—	1	—	—
Married	—	—	15	—	—	—	7	1	4	1	2
Widowed	—	—	—	—	—	—	—	—	—	—	—
Hydatidiform mole	3	—	3	—	—	—	1	—	1	1	—
Carneous mole	2	1	1	—	—	—	1	—	1	—	—
Hydramnios	2	—	2	—	—	—	—	1	1	—	—
Incarcerated gravid uterus ..	1	—	1	—	—	—	1	—	—	—	—
“Pregnancy” (unqualified) ..	8	—	8	—	—	—	4	—	2	—	2
144. Puerperal hæmorrhage	290	3	283	4	4	31	61	73	80	35	6
Single	—	3	—	—	—	1	1	1	—	—	—
Married	—	—	283	—	4	30	60	71	79	33	6
Widowed	—	—	—	4	—	—	—	1	1	2	—
(a) Placenta prævia	137	—	136	1	—	10	27	34	44	18	4
Single	—	—	—	—	—	—	—	—	—	—	—
Married	—	—	136	—	—	10	27	34	44	17	4
Widowed	—	—	—	1	—	—	—	—	—	1	—

Table LXXIV.—*continued.*

Cause of Death.	All Ages.	Civil Condition.			Ages.						
		Single.	Married.	Widowed.	15-	20-	25-	30-	35-	40-	45 and upwards
144— <i>contd.</i>											
(b) Other puerperal hæmorrhage.	153	3	147	3	4	21	34	39	36	17	2
Single	—	3	—	—	—	1	1	1	—	—	—
Married	—	—	147	—	4	20	33	37	35	16	2
Widowed	—	—	—	3	—	—	—	1	1	1	—
Post partum hæmorrhage	82	2	78	2	1	9	17	24	17	12	2
Adherent or retained placenta.	52	1	50	1	2	10	12	11	13	4	—
Accidental hæmorrhage..	19	—	19	—	1	2	5	4	6	1	—
145. Puerperal sepsis not returned as post-abortion.	602	47	548	7	17	108	190	144	105	34	4
Single	—	47	—	—	8	11	15	7	6	—	—
Married	—	—	548	—	9	96	174	134	99	33	3
Widowed	—	—	—	7	—	1	1	3	—	1	1
(a) Puerperal septicæmia and pyæmia.	602	47	548	7	17	108	190	144	105	34	4
Single	—	47	—	—	8	11	15	7	6	—	—
Married	—	—	548	—	9	96	174	134	99	33	3
Widowed	—	—	—	7	—	1	1	3	—	1	1
Scarlet fever	4	—	4	—	—	1	—	—	2	1	—
Streptococcal infection ..	51	3*	47	1	2	11	14	9	12	3	—
Staphylococcal infection ..	1	—	1	—	—	—	—	1	—	—	—
Pneumococcal infection..	5	—	5	—	—	—	2	2	1	—	—
Bacillus coli infection ..	3	1	2	—	—	1	2	—	—	—	—
Septic phlegmasia alba dolens, phlebitis, thrombosis.	29	—	29	—	—	1	11	5	9	3	—
Septic pneumonia	7	—	7	—	—	3	1	3	—	—	—
Septic endocarditis	8	1	7	—	1	1	3	—	2	1	—
Toxic myocarditis	1	—	1	—	—	—	—	—	1	—	—
Septicæmia	187	8	177	2	8	28	59	46	36	9	1
Sepsis	73	6	67	—	2	15	18	21	11	6	—
Septic intoxication, sapræmia.	13	3	10	—	—	2	6	3	2	—	—
Pelvic peritonitis	9	—	8	1	—	1	4	3	—	—	1
Peritonitis	59	7	51	1	1	12	18	13	8	6	1
Salpingitis	10	1	9	—	1	2	5	1	1	—	—
Metritis	6	—	6	—	—	1	1	2	1	1	—
Endometritis	38	6*	31	1	—	6	13	13	4	2	—
Parametritis	11	—	11	—	—	4	1	5	—	1	—
Pelvic cellulitis	13	2	11	—	1	1	6	1	4	—	—
Pelvic abscess	8	—	8	—	—	1	3	2	2	—	—
Parametric abscess	1	—	1	—	—	—	—	—	—	—	—
Erysipelas	3	—	3	—	—	2	1	—	—	—	—
Pyæmia	12	—	12	—	—	1	6	3	1	1	—
Other specified septic conditions.	3	—	3	—	—	—	1	—	1	—	1
“Puerperal fever”	47	9	37	1	1	13	15	11	7	—	—
(b) Puerperal tetanus	—	—	—	—	—	—	—	—	—	—	—
146. Puerperal albuminuria and convulsions.	334	24	308	2	16	71	80	83	55	27	2
Single	—	24	—	—	2	12	3	5	1	1	—
Married	—	—	308	—	14	59	75	78	54	26	2
Widowed	—	—	—	2	—	—	2	—	—	—	—
(1) Puerperal convulsions	244	22	221	1	14	52	55	64	42	15	2
Single	—	22	—	—	2	10	3	5	1	1	—
Married	—	—	221	—	12	42	51	59	41	14	2
Widowed	—	—	—	1	—	—	1	—	—	—	—
(2) Other conditions under 146	90	2	87	1	2	19	25	19	13	12	—
Single	—	2	—	—	—	2	—	—	—	—	—
Married	—	—	87	—	2	17	24	19	13	12	—
Widowed	—	—	—	1	—	—	1	—	—	—	—
147. Other toxæmias of pregnancy..	162	12	150	—	3	27	46	46	27	13	—
Single	—	12	—	—	2	6	2	2	—	—	—
Married	—	—	150	—	1	21	44	44	27	13	—
Widowed	—	—	—	—	—	—	—	—	—	—	—
Chorea	4	2	2	—	—	3	1	—	—	—	—
Toxæmia of pregnancy	104	7	97	—	1	14	31	27	20	11	—
Puerperal toxæmia	3	—	3	—	—	1	—	1	—	1	—
Uncontrollable vomiting ..	51	3	48	—	2	9	14	18	7	1	—

Table LXXIV.—*contd.*

Cause of Death.	All Ages.	Civil Condition			Ages.						
		Single.	Married.	Widowed.	15-	20-	25-	30-	35-	40-	45 and upwards
148. Puerperal phlegmasia alba dolens, embolism and sudden death.	159	3	156	—	1	23	26	49	34	24	2
Single	—	3	—	—	—	—	—	2	1	—	—
Married	—	—	156	—	1	23	26	47	33	24	2
Widowed	—	—	—	—	—	—	—	—	—	—	—
(a) Puerperal phlegmasia alba dolens not returned as septic.	52	—	52	—	—	8	5	14	14	11	—
Single	—	—	—	—	—	—	—	—	—	—	—
Married	—	—	52	—	—	8	5	14	14	11	—
Widowed	—	—	—	—	—	—	—	—	—	—	—
(b) Puerperal embolism and sudden death.	107	3	104	—	1	15	21	35	20	13	2
Single	—	3	—	—	—	—	—	2	1	—	—
Married	—	—	104	—	1	15	21	33	19	13	2
Widowed	—	—	—	—	—	—	—	—	—	—	—
149. Other accidents of childbirth..	300	14	284	2	2	40	96	83	54	23	2
Single	—	14	—	—	1	3	3	4	3	—	—
Married	—	—	284	—	1	37	93	79	50	22	2
Widowed	—	—	—	2	—	—	—	—	1	1	—
Contracted pelvis	50	1	47	2	1	11	15	14	6	3	—
Craniotomy	8	—	8	—	—	—	3	4	1	—	—
Instrumental delivery	24	2	22	—	1	2	11	5	5	—	—
Malpresentation	33	1	32	—	—	4	7	9	7	6	—
Version.. .. .	1	1	—	—	—	—	1	—	—	—	—
Abnormal foetus	8	—	8	—	—	2	2	1	2	1	—
Locked twins.. .. .	2	—	2	—	—	—	—	1	—	1	—
Disproportion.. .. .	22	2	20	—	—	4	8	4	5	1	—
Difficult and prolonged labour	31	1	30	—	—	2	11	6	10	2	—
Cæsarean section (reason not stated).†	17	1	16	—	—	3	3	3	5	2	1
Rupture of Cæsarean scar ..	4	—	4	—	—	—	—	3	—	1	—
Ruptured uterus	26	3	23	—	—	6	8	6	3	2	1
Laceration of perineum	3	—	3	—	—	—	1	2	—	—	—
Inversion of uterus	9	—	9	—	—	2	4	2	1	—	—
Retroverted gravid uterus..	1	—	1	—	—	—	—	1	—	—	—
Uterine inertia	20	1	19	—	—	—	9	9	1	1	—
Atony of uterus	2	—	2	—	—	—	1	1	—	—	—
Rigid cervix uteri	3	—	3	—	—	—	—	1	1	1	—
Prolapse of uterus	1	—	1	—	—	—	1	—	—	—	—
Retained or adherent placenta	25	1	24	—	—	3	9	7	6	—	—
Precipitate birth	1	—	1	—	—	—	—	—	—	1	—
Stillbirth	1	—	1	—	—	—	—	1	—	—	—
Multiple birth	8	—	8	—	—	1	2	3	1	1	—
150. Other or unspecified conditions of the puerperal state.	57	1	56	—	1	10	16	15	10	5	—
Single	—	1	—	—	—	1	—	—	—	—	—
Married	—	—	56	—	1	9	16	15	10	5	—
Widowed	—	—	—	—	—	—	—	—	—	—	—
(1) Puerperal insanity	14	1	13	—	—	4	5	2	2	1	—
Single	—	1	—	—	—	1	—	—	—	—	—
Married	—	—	13	—	—	3	5	2	2	1	—
Widowed	—	—	—	—	—	—	—	—	—	—	—
(2) Puerperal diseases of the breast.	18	—	18	—	1	4	5	4	3	1	—
Single	—	—	—	—	—	—	—	—	—	—	—
Married	—	—	18	—	1	4	5	4	3	1	—
Widowed	—	—	—	—	—	—	—	—	—	—	—
(3) Childbirth (unqualified) ..	25	—	25	—	—	2	6	9	5	3	—
Single	—	—	—	—	—	—	—	—	—	—	—
Married	—	—	25	—	—	2	6	9	5	3	—
Widowed	—	—	—	—	—	—	—	—	—	—	—
(with secondary causes as follows) :—											
Anæmia	2	—	2	—	—	—	1	—	—	1	—
Encephalitis	1	—	1	—	—	1	—	—	—	—	—
Myocarditis	6	—	6	—	—	—	2	2	2	—	—
Tachycardia	1	—	1	—	—	—	1	—	—	—	—
Valvular disease	2	—	2	—	—	—	1	1	—	—	—
Broncho pneumonia	6	—	6	—	—	—	—	3	2	1	—
Pneumonia	2	—	2	—	—	—	—	2	—	—	—

Table LXXIV—*contd.*

Cause of Death.	All Ages.	Civil Condition			Ages.						
		Single.	Married.	Widowed.	15-	20-	25-	30-	35-	40-	45 and upwards
150— <i>contd.</i>											
Bronchitis	1	—	1	—	—	—	—	1	—	—	—
Pulmonary œdema ..	1	—	1	—	—	—	—	—	1	—	—
Dilatation of stomach ..	1	—	1	—	—	—	—	—	—	1	—
Hepatitis	1	—	1	—	—	—	1	—	—	—	—
Total (including abortion other than criminal).	2,301	138*	2,143	20	50	349	615	603	465	196	23
Single	—	138*	—	—	15	45	34	29	14	1	—
Married	—	—	2,143	—	35	303	577	570	445	191	22
Widowed	—	—	—	20	—	1	4	4	6	4	1
Total from causes other than abortion (Nos. 142–150).	1,991	109	1,866	16	46	314	538	515	388	171	19
Single	—	109	—	—	13	36	26	21	12	1	—
Married	—	—	1,866	—	33	277	509	490	373	166	18
Widowed	—	—	—	16	—	—	3	4	3	4	1
Criminal abortion (<i>see</i> Table 25)	73	21	50	2	4	15	16	22	11	5	—
Single	—	21	—	—	4	9	2	4	1	1	—
Married	—	—	50	—	—	6	13	18	10	3	—
Widowed	—	—	—	2	—	—	1	—	—	1	—

* Including 2 divorced women.

† In addition, Cæsarean section was stated to have been performed in the cases of 121 deaths included under other headings in this table—ante partum hæmorrhage 1, placenta prævia 17, eclampsia 8, puerperal nephritis and albuminuria 2, toxæmia of pregnancy 8, chorea gravidarum 1, contracted pelvis 34, failed forceps 1, malpresentation 9, locked twins 1, disproportion 19, difficult labour 5, previous Cæsarian section 4, ruptured uterus 3, perineal tear 1, atony of uterus 1, rigid cervix uteri 3, inertia of uterus 3.

of them would have occurred if these women had not been pregnant. Every pregnant woman is exposed to about the same hazards of dying from causes unconnected with pregnancy as if she had not been pregnant, and if she does so die the fact of pregnancy or recent parturition is usually mentioned on the death certificate on the grounds that notwithstanding that normal childbearing is a physiological process, it is difficult to assert categorically that in the presence of some serious disease it did not, by diminishing the reserves of strength or by some other means, render recovery more difficult. The introduction of the new form of certificate in 1927 undoubtedly resulted in a more complete recording of associated childbearing, since this might in many instances be regarded as “contributing to death but not related to the immediate cause,” though neither “primary” nor “secondary” in the terminology of the old form of certificate.

A study of the trend of deaths before and after 1927 leads to the conclusion that about one-fifth of the deaths now classed as associated with childbearing would have escaped recognition as such in the death registers prior to the introduction of the new certificate; and this should be borne in mind when comparing recent rates with those prior to 1927.

A detailed discussion of this and many other factors which must be taken into account when comparing statistics of maternal

Table LXXV.—Deaths of Women not Classed to Pregnancy or Childbearing, but returned as associated therewith, 1936.

		Classification by selective rules as in previous years								Classification by order of preference stated by certifying physician. All ages.
		All Ages	15–	20–	25–	30–	35–	40–	45 and up-wards	
7.	Measles	2	—	1	—	—	—	1	—	1
8.	Scarlet fever	3	—	1	1	1	—	—	—	3
11.	Influenza	21	1	2	6	5	4	3	—	21
15.	Erysipelas	1	—	—	1	—	—	—	—	1
18.	Cerebro spinal fever	1	—	—	1	—	—	—	—	1
23.	Tuberculosis of respiratory system	39	1	13	8	7	8	2	—	37
24–32	Other forms of tuberculosis ..	6	—	2	2	—	2	—	—	6
34.	Syphilis	4	—	2	1	—	—	1	—	4
36 (a)	Septicæmia	1	—	1	—	—	—	—	—	1
42.	Ascariasis	1	—	—	—	1	—	—	—	1
44 (5)	Mumps	—	—	—	—	—	—	—	—	—
45–53.	Cancer	12	—	—	3	4	4	—	1	12
54 (a)	Tumours of female genital organs	23	—	2	1	2	12	5	1	24
55 (b)	Tumours of other sites	2	—	1	—	1	—	—	—	2
56.	Rheumatic fever	7	—	1	3	1	1	1	—	7
59.	Diabetes	2	—	—	—	—	1	1	—	1
63 (1)	Rickets	—	—	—	—	—	—	—	—	—
66 (a)	Adenoma of thyroid	1	—	—	—	—	1	—	—	1
66 (b)	Exophthalmic goitre	10	—	1	3	4	2	—	—	10
69 (2)	Obesity	1	—	—	—	—	1	—	—	1
70 (a)	Purpura	2	—	—	—	—	1	—	—	2
70 (b)	Hæmophilia	2	—	—	1	1	—	—	—	2
71 (a)	Pernicious anæmia	11	—	1	1	4	3	2	—	11
71 (b: 2)	Anæmia (not otherwise defined)	3	—	1	—	1	1	—	—	4
80.	Tabes dorsalis	1	—	—	—	—	1	—	—	1
81 (4)	Landry's paralysis	1	—	—	1	—	—	—	—	1
82 (a: 1)	Cerebral hæmorrhage	—	—	—	—	—	—	—	—	—
82 (b: 1)	Cerebral embolism	1	—	—	1	—	—	—	—	1
84 (b)	Other forms of insanity	4	—	1	1	1	1	—	—	4
85.	Epilepsy	1	—	—	1	—	—	—	—	1
87 (a)	Chorea	1	1	—	—	—	—	—	—	1
87 (d).	Disseminated sclerosis	2	—	1	1	—	—	—	—	2
87 (e)	Epileptiform seizure	1	—	1	—	—	—	—	—	1
90.	Pericarditis	—	—	—	—	—	—	—	—	—
91 (1)	Malignant endocarditis	4	—	1	1	2	—	—	—	5
92 (2)	Mitral valve disease	71	1	13	26	17	10	4	—	74
92 (1, 3, 4, 5)	Other or unspecified valvular disease	36	—	6	7	11	9	3	—	32
93 (b: 1)	Fatty heart	15	—	—	1	4	6	3	1	14
93 (b: 3), 93 (c).	Other or unspecified myocardial disease	35	1	4	4	9	10	4	3	29
94.	Diseases of the coronary arteries	6	—	—	—	2	2	1	1	3
95.	Other diseases of the heart	8	—	1	1	—	5	1	—	8
97 (2)	Atheroma with cerebral thrombosis	1	—	—	—	1	—	—	—	1
97 (3)	Atheroma without cerebral vascular lesion	—	—	—	—	—	—	—	—	—
99.	Mesenteric thrombosis	—	—	—	—	—	—	—	—	—
100 (1)	Varix	3	—	—	—	1	2	—	—	3
100 (2)	Other diseases of the veins	3	—	—	—	2	1	—	—	3
102.	Hypertension	1	—	—	—	—	—	1	—	2
105 (2)	Laryngitis	2	—	—	2	—	—	—	—	3
106.	Bronchitis	7	—	1	—	—	3	3	—	18
107.	Broncho pneumonia	14	—	—	2	5	5	2	—	14
108.	Lobar pneumonia	72	2	12	17	20	11	8	2	71
109.	Pneumonia (not otherwise defined)	12	1	1	2	7	1	—	—	12
110 (1)	Empyema	1	—	—	1	—	—	—	—	1
110 (2)	Pleurisy	—	—	—	—	—	—	—	—	—
111 (1)	Pulmonary oedema	—	—	—	—	—	—	—	—	—
111 (2)	Pulmonary embolism	1	—	—	—	—	1	—	—	1
112.	Asthma	8	—	—	3	2	3	—	—	8
115 (1)	Diseases of the teeth	3	—	—	1	2	—	—	—	3
115 (3)	Diseases of the tonsils	3	—	—	1	1	—	1	—	3
117 (a)	Ulcer of the stomach	1	—	—	1	—	—	—	—	1
119&120(a)	Diarrhœa	1	—	—	—	—	1	—	—	1
121.	Appendicitis	6	—	2	2	1	1	—	—	7
122 (a: 2)	Hernia not returned as strangulated	2	—	—	—	1	1	—	—	2
122 (b)	Intestinal obstruction	39	—	2	8	13	12	3	1	25
124 (b)	Cirrhosis of liver	1	—	—	—	—	1	—	—	1

Table LXXV.—*contd.*

		Classification by selective rules as in previous years								Classification by order of preference stated by certifying physician. All ages.
		All Ages	15—	20—	25—	30—	35—	40—	45 and upwards	
125 (1)	Acute yellow atrophy ..	53	2	11	18	10	7	4	1	52
125 (2)	Other diseases of the liver ..	2	—	1	1	—	—	—	—	2
130.	Acute nephritis	3	—	—	—	1	1	—	1	4
131.	Chronic nephritis	63	1	2	15	17	18	9	1	61
133 (a)	Pyelitis	6	—	1	—	—	2	3	—	6
133 (b)	Necrosis of kidney	1	—	—	—	—	—	1	—	1
134 (a)	Renal calculus	2	—	—	—	1	1	—	—	2
135 (a)	Cystitis	1	—	—	—	1	—	—	—	1
139 (b)	Prolapse of uterus	1	—	1	—	—	—	—	—	1
151.	Carbuncle	1	—	1	—	—	—	—	—	1
153.	Impetigo	1	—	—	—	—	1	—	—	1
157 (c)	Congenital malformation of heart	2	—	—	2	—	—	—	—	2
163–198.	Violence	9	—	2	4	1	2	—	—	9
Total		668*	11	94	158	165	160	67	13	663
Single		27	4	10	9	3	1	—	—	—
Married		633	7	84	149	161	155	65	12	—
Widowed		8	—	—	—	1	4	2	1	—
Associated with abortion (included above) ..		70	1	10	17	18	18	5	1	—
Single		3	1	1	1	—	—	—	—	—
Married		65	—	9	16	17	17	5	1	—
Widowed		2	—	—	—	1	1	—	—	—
Totals in accordance with preference stated by certifying physician		—	140	96	159	163	159	64	12	663
Single		—	3	11	10	3	1	—	—	28
Married		—	7	85	149	159	154	62	11	627
Widowed		—	—	—	—	1	4	2	1	8

* Of these 668 deaths 197 were stated to be associated with pregnancy, 70 with abortion, 29 with premature delivery, 11 with delivery at full term and 361 with childbirth. Cæsarean section was stated to have been performed in the case of 49 of these deaths of which 21 were attributed to ileus following Cæsarean section and assigned to No. 122 (b) above.

mortality with those of years prior to 1931, or with those of other countries, was included in the Review for 1933, pp. 96–113, to which reference should be made before drawing conclusions from such comparisons.

Table LXXIV gives in full detail of civil condition, age and cause, the deaths of women registered during 1936 which were classed to pregnancy and childbearing, that is to say to International groups 140–150, and to criminal abortion amongst the violent causes (Nos. 171, 175, 194, 195). The analysis contained in this table and its predecessors was summarized for each year 1924–33 in Table LXXI of the Review for 1933, and reference may be made to that table, and to Tables LXXVIII and LXXXIV respectively in the Reviews for 1934 and 1935, in order to compare the deaths of married, single or widowed women from specific causes during 1936 with those registered in previous years. The total deaths from

causes other than abortion (Nos. 142–150) during each year 1931 to 1936, distributed by civil condition and age, have been as follows, the numbers of live and still births registered in each year being also shown.

	1931	1932	1933	1934	1935	1936
Total deaths, excluding abortions (Nos. 142–150).. Single or divorced women	2,254	2,208	2,240	2,354	2,104	1,991
Married „	117	108	123	127	106	109
Widowed „	2,121	2,084	2,101	2,211	1,986	1,866
All women,	16	16	16	16	12	16
Ages 10– ..	—	—	1	—	—	—
15– ..	68	62	61	59	63	46
20– ..	383	321	366	372	327	314
25– ..	581	576	617	638	554	538
30– ..	578	553	501	585	541	515
35– ..	414	435	455	441	404	388
40– ..	207	234	215	235	185	171
45 up..	23	27	24	24	30	19
Live and still births	659,014	640,443	605,497	622,851	624,191	630,337

Table LXXV gives in similar detail of age, and by civil condition for the total, the causes to which the deaths classed as *associated with, though not due to, pregnancy or childbearing* were assigned, those associated with abortion being also distinguished at the foot of the table. The total consisted of 27 single, 633 married and 8 widowed women, compared with average numbers during 1931–35 of 37, 739 and 6 respectively. The annual totals of these deaths in the 6 years 1931 to 1936 have been 911, 713, 828, 747, 712 and 668, part of the fluctuation being accounted for by influenza epidemics. Chronic nephritis accounted for 63 (69 in 1935), acute yellow atrophy for 53 (39 in 1935) and lobar pneumonia for 72 (75 in 1935). Deaths assigned to intestinal obstruction numbered 39 (43 in 1935), including 21 from ileus following Cæsarean section.

The effect of the operation of the rules of preference upon the distribution of deaths between Tables LXXIV and LXXV was discussed in the Review for 1933, and the conclusion was reached that complete reliance upon the order of statement on the certificate of death rather than upon the rules of selection defined in the Manual of the International List of Causes of Death would not affect the *totals* assigned to maternal and non-maternal causes to any appreciable extent, although it might result in considerable transfers between the sub-groups making up the totals.

In 1936 a dual classification was carried out for all deaths, and the alternative assignment of the 2,969 deaths with mention of pregnancy or childbearing according to the physician's order of preference is shown below and in the final column of Table LXXV. Comparison between the cause distributions resulting from the two systems of selection proves that, although many individual deaths are classified differently by the two methods, the transfers between cause groups tend to balance one another to a remarkable extent so that the total distributions resulting do not differ to any important degree.

List No.		By selective rules (as tabulated)	By physician's order of preference
140	Post-abortion sepsis	241	241
141	Abortion not returned as septic	69	69
142	Ectopic gestation	71	71
143	Other accidents of pregnancy	16	16
144	Puerperal hæmorrhage	290	293
145	Puerperal sepsis not returned as post abortive	602	591
146	Puerperal albuminuria and convulsions..	334	338
147	Other toxæmias of pregnancy	162	164
148	Puerperal phlegmasia alba dolens ..	159	159
149	Other accidents of childbirth	300	305
150	Other or unspecified conditions of the puerperal state	57	59
140-150	<i>Total deaths classed to Pregnancy and Child- bearing</i>	2,301	2,306
11	Influenza	21	21
23	Tuberculosis of respiratory system ..	39	37
92	Valvular disease of heart	107	106
93	Diseases of myocardium	50	43
106, 112	Bronchitis, asthma	15	26
108	Lobar pneumonia	72	71
107, 109	Other pneumonia	26	26
122b	Intestinal obstruction	39	25
125 (1)	Acute yellow atrophy of liver	53	52
131	Chronic nephritis	63	61
—	All other causes (<i>see</i> Table LXXV) ..	183	195
	<i>Total deaths classed to causes other than 140-150 with associated pregnancy and childbearing</i>	668	663

Puerperal sepsis deaths would be reduced by 2 per cent. according to the physician's preference; the totals for abortion and other accidents of pregnancy would not be changed; puerperal hæmorrhage, the toxæmias and other accidents of childbirth would be increased by 1 or 2 per cent.; and the total classed to Nos. 140-150 would not be appreciably affected. Deaths classed to bronchitis would be increased and myocardial diseases decreased for reasons discussed in the section dealing with heart disease. Lobar pneumonia has a high preference by rule over the non-septic conditions connected with child-bearing

and has been believed to be overstated at the expense of the maternal causes, but this is shown not to be the case, the total being scarcely affected when puerperal sepsis deaths have also been taken into account. Chronic nephritis also would not be appreciably changed by substituting the physician's preference. Paralytic ileus following Cæsarean section is mainly responsible for the overstatement of deaths classed to intestinal obstruction by the rules, a matter which has been frequently referred to. The position with regard to acute yellow atrophy is discussed on page 115.

No national statistics are available of the frequency with which *Cæsarean section* is resorted to, but the deaths with mention of the operation, whether assigned to puerperal or non-puerperal causes, were increasing until 1931 (Table LXXVI). In 1921–23 and succeeding triennia to 1933–35 they averaged 103, 117, 142, 164 and 175 per annum, and in 1936 numbered 187.

Table LXXVI.—Deaths with Mention of Cæsarean Section, 1921–1936.

	Assigned to Puerperal Causes.						Assigned to non-puerperal causes.			Total with mention of Cæsarean Section.
	Placenta prævia.	Con-tracted pelvis.	Albumin-uria, etc.	Other specified.	Reason not stated.	Total.	Intes-tinal obstruc-tion.	Other Causes.	Total.	
1921 ..	4	19	3	13	50	89	5	18	23	112
1922 ..	5	9	9	25	20	68	7	13	20	88
1923 ..	1	8	8	35	33	85	5	18	23	108
1924 ..	7	39	6	32	4	88	11	13	24	112
1925 ..	9	31	8	32	10	90	11	18	29	119
1926 ..	6	40	16	30	5	97	10	12	22	119
1927 ..	5	24	10	56	2	97	8	23	31	128
1928 ..	9	40	16	46	2	113	11	24	35	148
1929 ..	15	55	9	17	8	104	11	35	46	150
1930 ..	11	43	8	25	5	92	23	27	50	142
1931 ..	14	54	16	41	10	135	16	32	48	183
1932 ..	13	46	10	38	9	116	22	30	52	168
1933 ..	10	51	9	39	16	125	21	24	45	170
1934 ..	6	33	16	42	9	106	23	32	55	161
1935 ..	18	40	9	59	16	142	17	36	53	195
1936 ..	17	34	2	68	17	138	21	28	49	187

All deaths classified as caused by or associated with *abortion* are brought together in Table LXXVII under the various headings, with corresponding figures for previous years for which the information is available.

It should be noted that abortions resulting from other complications of pregnancy or induced therapeutically on that account are still classed to Nos. 143, 146, 147 and do not appear under any of the “abortion” headings unless there was some more important associated condition causing the death to be classed as “associated with abortion” in Table LXXV.

Special enquiries were continued during 1936 regarding the deaths classified as due to pregnancy or child-bearing as to whether the deceased had been delivered of a live or still-born child, or whether there had been an abortion, or death had occurred whilst in the

pregnant state (which would include some incomplete abortions), and the results of these enquiries are shown in Table LXXVIII. There were 37 deaths classed to albuminuria, eclampsia, other toxæmias and "other accidents" of pregnancy in which an abortion was ascertained to have occurred. How many of these occurred spontaneously and how many by therapeutic induction was not ascertained. Such abortions which are secondary to toxæmia or to some other morbid condition of pregnancy, and of which mention

Table LXXVII.—Deaths attributed to, or associated with, Abortion, 1926-36.

Old List No.	New List No.		1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.
Part of 146	140	Post-abortive sepsis ..	222	215	224	238	300	229	262	257	295	262	241
	141	Abortion not returned as septic :—											
Part of 143c		(1) Hæmorrhage following abortion.	72	72	47	51	59	97	105	108	94	71	56
143a		(2) Without record of hæmorrhage.	86	82	77	67	65	21	12	13	5	20	13
199, 202	VI (Table 25).	Criminal abortion (inquest cases).	51	47	57	67	67	79	69	85	100	94	73
		Total attributed to abortion.	431	416	405	423	491	426	448	463	494	447	388
		Associated with abortion but not classed to it.	?	?	83	182*	77	77	90	97	64	74	70
		Total attributed to, and associated with, abortion.	?	?	488	605	568	503	538	560	558	521	458

* The excessive number of deaths associated with abortion but not classed to it in 1929 was partly due to the influenza epidemic of that year and partly to the allocation to abortion rather than to childbirth for that year only. 63 deaths said to be associated with premature delivery without definition as to length of gestation.

is not always made on death certificates, are in a class by themselves, and they are not in the present system of classification included in the total of abortion deaths. The enquiries also made it possible to exclude from the abortion group No. 141 (1) deaths attributed to "antepartum hæmorrhage" or "accidental hæmorrhage of pregnancy" if accompanied by a live or still birth, which owing to the unsatisfactory classification of the hæmorrhages of pregnancy in the last revision of the International List, a somewhat confused terminology, and a frequent failure to distinguish between abortion and stillbirth, might have been in previous years assigned to this number. Conversely it was possible to correctly classify to No. 141 (1) a few deaths which would otherwise have been assigned to No. 144, puerperal hæmorrhage. There still remains in the Table a few anomalous assignments to No. 141 which must continue until the International List has been revised, but the abortion and hæmorrhage deaths as tabulated may now be regarded as substantially free from the errors which have been referred to in previous years.

Deaths known to have resulted from criminal abortion numbered 73, compared with a yearly average of 82 in 1930-35 and included 21 single women. Post-abortive sepsis caused 241 deaths, the

average in 1930-35 being 268. These post-abortive sepsis deaths comprised 28·6 per cent. of the total assigned to puerperal sepsis, compared with an average of 24·5 in the preceding 5 years.

Table LXXVIII.—Deaths from Pregnancy and Child-bearing Classified by Cause, Age, Civil Condition and Outcome of Pregnancy, 1936.

Cause to which Initial Classification was made. §				Deaths following or accompanied by				Deaths in the Pregnant State.	No information obtained.	TOTAL.
				Live Birth(s).	Still Birth(s).	Live and Still Birth.	Abortion.			
140 ALL CAUSES	Total	..	..	940*	484*	11	297	237	332	2,301
-150.	Single	..	..	39	34	—	28	14	23	138
	Married	..	..	888*	449*	11	265	221	306	2,140
	Widowed	..	..	11	1	—	4	2	2	20
	Divorced	..	..	2	—	—	—	—	1	3
	Ages 15-	..	..	22	11	—	3	7	7	50
	20-	..	..	158	62*	4	40	28	57	349
	25-	..	..	267*	119	3	73	53	100	615-
	30-	..	..	249	127	1	82	59	85	603
	35-	..	..	156	113	3	76	55	62	465
	40-	..	..	80	48	—	19	30	19	196
	45 up.	..	..	8	4	—	4	5	2	23
140	Post-abortive sepsis	..	..	—	—	—	207	—	34	241
141	Abortion not returned as septic—			—	—	—	—	—	—	—
	(1) With record of hæmorrhage	..	..	—	—	—	35	9	12	56
	(2) Without	..	..	—	—	—	12	1	—	13
142	Ectopic gestation ..	..	..	—	2	—	—	52	17	71
143	Other accidents of pregnancy	..	..	2	—	—	—	13	1	16
144	Puerperal hæmorrhage—			—	—	—	—	—	—	—
	(a) Placenta prævia ..	..	..	18	70	—	2	30	17	137
	(b) Other puerperal hæmorrhage	..	..	89	37	1	—	2	24	153
145	Puerperal sepsis not returned as post-abortive.	..	..	398	105	3	—	1	95	602
146	Puerperal albuminuria and convulsions.	..	..	112	92*	2	7	71	50	334
147	Other toxæmias of pregnancy	..	..	25	42	1	30	43	21	162
148a	Puerperal phlegmasia alba dolens not returned as septic.	..	..	40	3	—	1	1	7	52
148b	Puerperal embolism and sudden death.	..	..	77*	21	—	—	3	6	107
149	Other accidents of childbirth	..	..	135	108	4	2	11	40	300
150 (1)	Puerperal insanity	..	..	12	—	—	1	—	1	14
150 (2)	Puerperal diseases of the breast	..	..	14	—	—	—	—	4	18
150 (3)	Childbirth (unqualified)	..	..	18	4	—	—	—	3	25

* Includes one death in which a second child was undelivered.

§ The classification by cause was modified in the light of the information obtained in the course of the special enquiries in the case of deaths certified as puerperal sepsis and found to be post-abortive, or deaths certified as antepartum hæmorrhage or accidental hæmorrhage of pregnancy following which a live or still birth was said to have occurred, or deaths otherwise assignable to No. 144 (b) but found to have followed an abortion.

Many medical certificates contain no statement as to whether the sepsis followed abortion or delivery at term, and it was ascertained by a sample inquiry in 1932 that about 4 per cent. of such deaths were post-abortive sepsis, and on the basis of this the sepsis figures for the six years 1929-34 can be corrected as explained in previous Reports with the effects upon mortality rates as noted below Table LXXX. In 1935 and 1936, as the result of the enquiries mentioned above, the correct allocation of sepsis deaths was made possible.

Rates of Mortality.—Maternal mortality rates should properly be based upon the number of pregnancies, but this number cannot

be ascertained owing to the absence of statistics of abortions and of multiple births. It is, therefore, necessary to choose between some approximation to this number, such as the registered annual births, and the total living population of women of the specified class whether pregnant or not. In the Reviews for the years 1921–30, crude death rates per million women of all ages were shown in Table 5 for each puerperal cause, but from 1931 rates based upon the total births registered in each year have been substituted (Table 7). Rates of mortality from combined puerperal causes per 1,000 live births have been given in the text of the Reports since 1902, and in Table LXXIX such rates are given from 1891–95 to 1906–10 according to the classification in use prior to 1911, and from 1911 onwards according to both the old and revised systems.

Table LXXIX.—Mortality of Women in or associated with Childbirth per Thousand Children born alive, 1891–1936.

Year.	Classification in use from 1911 onwards.				Classification in use before 1911.				Total Mortality from or associated with pregnancy or childbirth. §
	Puerperal (including post-abortive) sepsis.	Other puerperal causes including abortion§	Total mortality from pregnancy and child-bearing. §	Associated causes*	Puerperal (including post-abortive) sepsis.	Other puerperal causes including abortion§	Total mortality from pregnancy and child-bearing. §	Associated causes†	
1891–95	—	—	—	—	2·60	2·89	5·49	—	—
1896–1900	—	—	—	—	2·12	2·57	4·69	—	—
1901–05	—	—	—	—	1·95	2·32	4·27	1·29	5·56
1906–10	—	—	—	—	1·56	2·18	3·74	1·26	5·00
1911–15	1·42	2·61	4·03	0·99	1·50	2·31	3·81	1·21	5·02
1916–20	1·51	2·61	4·12	1·68	1·59	2·29	3·88	1·92	5·80
1921–25	1·40	2·50	3·90	1·14	1·48	2·21	3·69	1·35	5·04
1926–30	1·73	2·54	4·27	1·24	1·78	2·23	4·01	1·50	5·51
1931–35	1·76	2·54	4·30	1·29	1·83	2·29	4·12	1·48	5·60
1911 ..	1·43	2·44	3·87	1·04	1·52	2·15	3·67	1·24	4·91
1912 ..	1·39	2·59	3·98	0·97	1·47	2·31	3·78	1·17	4·95
1913 ..	1·26	2·70	3·96	0·91	1·34	2·37	3·71	1·16	4·87
1914 ..	1·55	2·62	4·17	0·95	1·63	2·32	3·95	1·17	5·12
1915 ..	1·47	2·71	4·18	1·09	1·56	2·38	3·94	1·38	5·27
1916 ..	1·38	2·74	4·12	0·94	1·47	2·40	3·87	1·19	5·06
1917 ..	1·31	2·58	3·89	0·95	1·39	2·27	3·66	1·18	4·84
1918 ..	1·28	2·51	3·79	3·81	1·35	2·20	3·55	4·05	7·60
1919 ..	1·67	2·70	4·37	1·93	1·76	2·36	4·12	2·18	6·30
1920 ..	1·81	2·52	4·33	1·13	1·87	2·25	4·12	1·34	5·46
1921 ..	1·38	2·54	3·92	1·08	1·46	2·25	3·71	1·29	5·00
1922 ..	1·39	2·42	3·81	1·35	1·46	2·12	3·58	1·58	5·16
1923 ..	1·30	2·52	3·82	1·00	1·38	2·22	3·60	1·22	4·82
1924 ..	1·39	2·51	3·90	1·16	1·48	2·22	3·70	1·36	5·06
1925 ..	1·56	2·52	4·08	1·07	1·62	2·24	3·86	1·29	5·15
1926 ..	1·60	2·52	4·12	1·02	1·64	2·23	3·87	1·27	5·14
1927 ..	1·57	2·54	4·11	1·32	1·63	2·20	3·83	1·60	5·43
1928 ..	1·79	2·63	4·42	1·20	1·85	2·30	4·15	1·47	5·62
1929 ..	1·80	2·53	4·33	1·49	1·83	2·24	4·07	1·75	5·82
1930 ..	1·92	2·48	4·40	1·19	1·96	2·19	4·16	1·43	5·59
1931 ..	1·66	2·45	4·11	1·44	1·71	2·22	3·93	1·62	5·55
1932 ..	1·61	2·60	4·21	1·16	1·68	2·33	4·01	1·36	5·37
1933 ..	1·83	2·68	4·51	1·43	1·90	2·42	4·32	1·62	5·94
1934 ..	2·03	2·57	4·60	1·25	2·10	2·30	4·39	1·45	5·85
1935 ..	1·68	2·42	4·10	1·19	1·75	2·20	3·95	1·34	5·29
1936 ..	1·39	2·41	3·80	1·10	1·47	2·18	3·65	1·25	4·90

* 668 deaths in 1936 (Table LXXV).

† 668 deaths in Table LXXV, and 90 from puerperal nephritis and albuminuria in 1936.

§ Excluding criminal abortion.

The changes in the classification of causes in 1911 involved certain transfers of puerperal mastitis, phlegmasia alba dolens and nephritis deaths, which necessitate tabulation of the dual series of rates for comparison with earlier years.

Reliable statistics of stillbirths have been available since 1928, and as the total births, *i.e.*, live and still births, provide a closer approximation to the number of women exposed to the risk of dying from puerperal conditions than do live births alone, maternal mortality rates have been calculated since that year on both bases, and will continue to be so calculated for a sufficient period to enable statistical continuity to be assured.

For a discussion of the relative advantages of, and fallacies inherent in, the different rates used as measures of mortality risk in childbearing, reference should be made to the Review for 1933, pp. 113–116.

Table LXXIX shows that the annual rate of total mortality from pregnancy and childbearing with exclusion of criminal abortion, ranged from 3·87 to 4·37 per 1,000 live-born children during 1911–20, and from 3·81 to 4·42 in the next decade. The years 1928–30 and 1933–34 were characterized by higher rates for puerperal sepsis than had been recorded for many years, save in 1920, and the total rate in consequence was enhanced in those years, but in 1935 it fell to 4·10 and in 1936 to 3·80, a rate below that of any year since 1918.

Mortality classed to causes associated with pregnancy or childbearing ranged from 0·91 to 1·09 during 1911–17, was very high owing to influenza in the years 1918–19, and was again enhanced from the same cause in 1922, 1927, 1929, and 1933. During the four years 1923–26 before introduction of the new death certificate the rate averaged 1·06, and in 1931–35 it averaged 1·29, but as was pointed out in the Review for 1933 an increase of about one-fifth in this rate has probably resulted from the fuller information invited by the new certificate. In 1936 the rate was 1·10, the lowest since 1926.

Abortion deaths can only be distinguished from 1926 onwards and Table LXXX shows the mortality rates per thousand live births in each year 1926 to 1936 from pregnancy and childbearing with exclusion of abortion, distinguishing the sepsis mortality, and also from other causes associated with pregnancy and childbearing excluding those with mention of abortion. In the next part of the Table similar rates per thousand live and still births are shown for each year 1928 onwards and rates from puerperal sepsis including abortion are added. During the ten years the mortality from pregnancy and childbearing without abortion has fluctuated between maximal rates in 1928 and 1934 and minimal rates in 1927, 1931 and 1936, the lowest rate of 3·29 being recorded in 1936. The sepsis component of this rate has fallen from 1·53 in 1934 to 0·99 in 1936. In the last two columns are given the total abortion rates (including

criminal) and the rates from non-maternal causes associated with abortion, these rates being based upon the population of women between the ages of 15 and 45. No consistent change in the abortion rate was evident between 1928 and 1935, and in 1936 the rate fell to 39 per million, the lowest level in the 9 years for which records are available.

The trend of mortality rates from the separate causes can be ascertained from Table 7.

Table LXXX.—Mortality rates of Women in or associated with pregnancy and childbearing, with separation of abortion, 1926-36.

Year.	Per 1,000 Live Births.				Per 1,000 Live and Still Births.					Per Million women aged 15-45.	
	Pregnancy and childbearing without abortion.			Associated causes without abortion.	Pregnancy and childbearing without abortion.			Associated causes without abortion.	Sepsis, including abortion. ‡	Abortion, including criminal.	Associated with abortion.
	Septic.	Other.	Total.		Septic.	Other.	Total.				
1926	1.28	2.29	3.57	?	—	—	—	—	—	—	—
1927	1.24	2.30	3.54	?	—	—	—	—	—	—	—
1928	1.46	2.44	3.90	1.07	1.40	2.34	3.74	1.03	1.72	42	9
1929	1.43	2.35	3.78	1.21	1.38	2.25	3.63	1.25	1.73	43*	12†
1930	1.45	2.29	3.74	1.07	1.40	2.19	3.59	1.03	1.84	50*	8
1931	1.30	2.27	3.57	1.32	1.25	2.17	3.42	1.27	1.59	43*	8
1932	1.19	2.41	3.60	1.01	1.14	2.31	3.45	0.97	1.55	46*	9
1933	1.39	2.47	3.86	1.26	1.33	2.37	3.70	1.21	1.75	47*	10
1934	1.53	2.40	3.93	1.14	1.47	2.31	3.78	1.10	1.95	51*	7
1935	1.24	2.27	3.51	1.07	1.19	2.18	3.37	1.02	1.61	46	8
1936	0.99	2.30	3.29	0.98	0.96	2.20	3.16	0.94	1.34	39	7

* If corrected for puerperal sepsis deaths having no statement as to duration of pregnancy (*see text*) the estimated rates for 1929 to 1934 are raised to 46, 53, 46, 47, 50 and 53, and the septic and total rates excluding abortion are decreased by about 0.04 per 1,000. No correction is necessary for 1935 or 1936.

† Corrected in accordance with the note below Table LXXVII.

‡ Excluding criminal abortion.

Mortality rates from each cause at three ages of the mother, based upon the estimated numbers of live and still-births at those ages calculated from Census data, were given in Table LXXV of the Review for 1933 relating to each year 1924-33, and Table LXXXV of the Review for 1934 gave similar rates at the three ages for causes other than abortion in married women based upon estimated legitimate births, and for abortion in married and single women based upon the respective estimated populations in 1930-32, 1933 and 1934.

Pending the ascertainment of age of mother at birth registration the estimated numbers of births at various ages at dates several years after the census were not thought to be sufficiently reliable to justify the calculation of similar rates for subsequent years.

Number of previous confinements and multiple births.—Special enquiries were again made during 1936 regarding the number of previous confinements for every death classed to maternal causes and as to whether the birth was multiple or single, live or still, for every death of a married woman classed to maternal causes other than abortion. The question as to previous history was modified to the

number of previous "pregnancies", instead of previous "confinements" as in 1935. Complete replies on these matters were received relating to 1,718 of the deaths and partial replies relating to 116, and the information so obtained is analysed in Table LXXXI. Comparison of the birth order distribution with that for 1935 (as given in Table XCI of the Review for that year) is given below:—

	1st	2nd	3rd	4th	5th or later
1935. Per cent. distribution according to order of "confinement."	43.2	18.3	10.8	7.1	20.6
1936. Per cent. distribution according to order of "pregnancy."	41.8	19.6	11.4	7.9	19.3

A slightly larger proportion were recorded in 1935 as having had no previous confinement than were recorded in 1936 as having had no

Table LXXXI.—Deaths of Married Women Classed to Pregnancy and Childbearing, according to previous Fertility and Outcome of the Pregnancy resulting in Death, 1936.

No. of previous pregnancies.	Total of known birth order.	With live or still birth.					Total with live or still birth.	With abortion	Deaths in the pregnant state.
		Single birth.		Multiple birth.					
		Live.	'Still.	Live only.	Live and still.	Still only.			
0	719	409	184	11	6	3*	613*	40	66
1	336	177	73	6	3	3	262	40	34
2	196	76	46	2*	1	1	126*	42	28
3	135	52	26	2	—	1	81	38	16
4	85	27	24	2	—	2	55	24	6
5	87	30	21	—	—	—	51	19	17
6	35	13	11	3	—	—	27	7	1
7	36	12	11	—	—	—	23	8	5
8	32	9	9	1	—	—	19	6	7
9	13	3	5	—	—	1	9	—	4
10	11	5	3	—	—	—	8	3	—
11	10	1	5	—	—	—	6	2	2
12	13	6	4	1	—	1	12	—	1
13	6	1	1	—	—	—	2	2	2
14	1	—	—	—	—	—	—	—	1
15	1	—	1	—	—	—	1	—	—
19	2	1	1	—	—	—	2	—	—
Totals of known birth order	1,718	822	425	28*	10	12*	1,297†	231	190
Birth order not known	—	36	12	2	1	—	51	34	31

* Includes one death in which a second child was undelivered.

† Includes two deaths in which a second child was undelivered.

previous pregnancy, and this may be due to some abortions not having been classed as "confinements," although the proportions in the two years do not differ by an amount which is statistically significant. About 42 per cent. of maternal deaths of married women occur in connection with first pregnancies, about 20 per cent. in 2nd pregnancies, 19 per cent. in 3rd and 4th pregnancies and 19 per cent. in pregnancies of later order.

Table LXXXI also shows that whereas 59·3 per cent. of the maternal deaths occurring in first pregnancies were accompanied by one or more live births, the proportion declined to 55·4 per cent. in 2nd pregnancies, 40·3 per cent. in 3rd pregnancies and 36·2 per cent. in 4th or later pregnancies. Out of 1,297 maternal deaths following a live or still birth, 50 accompanied a multiple birth, a proportion of 1 in 26. The proportion of multiple to total confinements being of the order 1 in 90, it is evident that the fact of a pregnancy being multiple enhanced the average mortality risk considerably.

Regional distribution.—Deaths from abortion other than criminal, and from the residual groups of septic and other causes excluding abortion, were distributed amongst the different types of area as follows :—

	England & Wales.	Greater London.	County Boroughs.*	Other urban districts.*	Rural districts.*
140. Post-abortive sepsis	241	37	98	79	27
141. Abortion, not septic	69	10	23	24	12
145. Puerperal sepsis not returned as abortion	602	69	190	200	143
142-4, 146-50. Other causes	1,389	155	474	454	306

(* Outside Greater London.)

Comparison of these totals with the corresponding figures on page 131 of the Review for 1935 shows that whilst abortion deaths declined in Greater London by 24 and in the rural districts by 22 the county boroughs showed an increase of 6. Puerperal sepsis deaths registered a decline of 26 in Greater London, 59 in the county boroughs, 45 in other urban districts and 12 in the rural districts. Other causes showed a slight fall in Greater London and other urban districts but a rise of 30 in the county boroughs and 28 in the rural districts.

The 125 abortion deaths in the county boroughs (including those within the boundary of Greater London) were thus located :—Bath 1, Birmingham 7, Blackpool 1, Bolton 1, Bournemouth 1, Brighton 1, Bristol 5, Burnley 1, Chester 2, Coventry 3, Croydon 1, Derby 2, Doncaster 3, Gateshead 1, Gloucester 1, Great Yarmouth 1, Grimsby 2, Halifax 2, Huddersfield 2, Kingston-upon-Hull 5, Leeds 4, Leicester 1, Liverpool 1, Manchester 10, Middlesbrough 6, Newcastle-upon-Tyne 7, Northampton 2, Norwich 2, Nottingham 4,

Oldham 2, Portsmouth 1, Preston 2, St. Helens 2, Salford 4, Sheffield 6, Southampton 3, Southport 2, South Shields 1, Stoke-on-Trent 3, Wakefield 1, Walsall 2, West Ham 3, West Hartlepool 1, Wigan 1, Worcester 2, York 1, Cardiff 4, Merthyr Tydfil 1, Swansea 3.

The distribution throughout the country of the mortality ascribed to pregnancy and childbearing, including abortion, in 1936, is outlined in Table LXXXII. The London rates, both for sepsis and other mortality, were the lowest in the table. The total rate was highest in Wales I and II, North I and IV following next in order.

Puerperal fever notification.—The records of cases of puerperal fever and pyrexia notified are collated with those of births and of deaths from this cause in Table LXXXII. The proportion to live births of puerperal fever cases notified is 35 per 10,000. This rate

Table LXXXII.—Distribution throughout England and Wales of Mortality of Women in Childbirth, distinguishing Septic and Other Causes, and of Prevalence of Puerperal Fever and Pyrexia, 1936.

	Per 1,000 Live Births.					Per 1,000 Live and Still Births.					"Puerperal Fever" Cases per 100 Deaths.
	Deaths.			Cases.		Deaths.			Cases.		
	Sepsis.	Other causes.	Total.	"Fever."	"Pyrexia."	Sepsis.	Other causes.	Total.	"Fever."	"Pyrexia."	
England and Wales ..	1.39	2.41	3.80	3.46	10.20	1.34	2.31	3.65	3.32	9.79	248
South-East ..	0.98	1.68	2.66	3.21	10.38	0.95	1.62	2.57	3.10	10.04	326
Greater London ..	0.87	1.36	2.23	3.38	11.35	0.84	1.31	2.16	3.27	10.99	388
Remainder of South-East ..	1.16	2.16	3.32	2.94	8.89	1.12	2.09	3.20	2.84	8.59	254
North ..	1.60	2.96	4.56	3.47	10.92	1.53	2.83	4.36	3.31	10.43	216
North I ..	2.27	2.72	4.99	3.07	9.96	2.17	2.61	4.78	2.94	9.53	135
" II ..	1.52	2.28	3.80	2.56	10.16	1.46	2.19	3.64	2.46	9.75	169
" III ..	1.58	2.91	4.49	4.52	11.29	1.51	2.78	4.29	4.32	10.79	286
" IV ..	1.37	3.24	4.61	3.25	11.28	1.30	3.09	4.39	3.10	10.75	238
Midland ..	1.47	2.33	3.80	3.40	9.31	1.41	2.24	3.65	3.27	8.95	232
Midland I ..	1.45	2.31	3.76	3.79	8.57	1.40	2.22	3.62	3.65	8.24	261
" II ..	1.49	2.38	3.87	2.60	10.80	1.43	2.28	3.71	2.49	10.37	174
East ..	1.50	2.62	4.11	3.44	8.90	1.44	2.52	3.96	3.31	8.56	230
South West ..	1.37	2.60	3.97	2.96	10.60	1.32	2.50	3.82	2.85	10.20	216
Wales ..	2.16	3.30	5.46	5.28	8.63	2.05	3.12	5.17	4.99	8.16	244
Wales I ..	2.39	3.21	5.59	6.16	8.94	2.26	3.03	5.29	5.83	8.46	258
" II ..	1.52	3.55	5.08	2.74	7.72	1.44	3.37	4.81	2.60	7.32	180
County Boroughs*	1.46	2.51	3.97	4.63	12.45	1.40	2.41	3.81	4.44	11.94	318
Other Urban Districts*	1.57	2.69	4.26	2.79	8.70	1.50	2.58	4.08	2.67	8.33	178
Rural Districts* ..	1.57	2.93	4.50	2.50	7.26	1.50	2.81	4.32	2.40	6.96	159
Greater Admin. County	0.75	1.23	1.97	3.20	11.76	0.72	1.19	1.91	3.10	11.39	429
London Outer Ring ..	0.98	1.47	2.45	3.54	10.99	0.95	1.42	2.37	3.43	10.64	361

* Excluding Greater London.

rose from 30 in 1927 to 40 in 1930 and averaged 37 in 1931–35. "Fever" and "pyrexia" notifications combined in the six years from 1931 to 1936 totalled 128, 123, 136, 141, 136 and 137 per 10,000 live births. The records of notifications under both headings will be found in Tables 28–29 in full detail of locality. As in previous years the highest fever rates were recorded for Wales I and North III, the pyrexia rates being highest in Greater London, North III and North

IV. The fever rate was lowest in North II and Midland II, and the pyrexia rate in Wales II.

The proportion of puerperal fever cases to sepsis deaths ranges in the regions from 135 cases notified per 100 deaths in North I to 388 in Greater London.

163-171. **Suicide.**—There were 5,079 deaths by suicide, 3,411 of males and 1,638 of females. The male standardized death rate, which reached its highest level, 165 per million living, in 1932, has declined each year since to 133 in 1936. The female standardized rate, which reached a maximal level of 65 per million in 1933, has also fallen again to 57 in 1936.

Table LXXXIII compares the mean annual death rates by suicide for each sex and age in the decades from 1861-70 to 1911-20, quinquennial periods from 1921-25 to 1931-35 and in 1936. At ages 10-15 there has been a continuous decline since 1891-1900, but at 15-20 the male rate was highest in 1931-35, whereas the female rate

Table LXXXIII.—Mean Annual Death rates by Suicide, per million living at different ages : 1861 to 1936.

	0-	10-	15-	20-	25-	35-	45-	55-	65-	75 and over	All ages (Standardized)
<i>Males</i>											
1861-70	—	4	28	59	93	163	263	377	359	251	105
1871-80	—	4	24	64	104	179	276	408	416	335	115
1881-90	—	4	29	67	117	202	310	437	478	373	128
1891-1900	—	5	34	84	142	241	348	456	479	386	144
1901-10	—	4	36	91	152	252	397	523	508	382	157
1911-20	—	3	32	69	122	196	278	389	380	350	119
1921-25	—	2	28	71	100	200	326	457	493	408	129
1926-30	—	2	35	84	122	222	366	513	530	464	146
1931-35	—	2	39	96	141	209	379	542	534	483	152
1936	—	2	29	91	120	192	300	491	478	436	133
<i>Females.</i>											
1861-70	—	3	31	31	35	53	84	87	83	70	35
1871-80	—	3	26	33	39	54	81	95	92	64	36
1881-90	—	3	34	40	43	64	84	92	86	53	39
1891-1900	—	4	37	41	52	76	96	100	88	52	44
1901-10	—	3	34	45	56	80	109	109	88	49	47
1911-20	—	2	30	41	50	74	100	102	81	52	43
1921-25	—	1	23	40	48	78	120	125	92	60	46
1926-30	—	0	27	45	66	96	148	158	123	66	57
1931-35	—	—	23	49	77	108	153	165	135	84	62
1936	—	—	19	39	61	99	164	161	134	68	57

has declined in recent years. For males between the ages of 20 and 75 the rates increased until 1901-10, fell sharply in the next decade and then increased again to 1931-35, but 1936 records substantially lower rates than in the preceding quinquennium. A similar increase occurred up to 1901-10 for females between 20 and 65, followed by a fall in 1911-20 and subsequent rise until 1931-35, but 1936 shows lower rates at ages 20-35 and 55-65. The rapid increase in suicide noticeable since 1911-20 for females at ages over 65 was also checked in 1936.

When the method of suicide is taken into account Table 6 shows that slight increases occurred in 1936 compared with the preceding year in the number of suicides of males by hanging, strangulation, drowning or firearms, and of females by poisonous gas (reaching the highest figure yet recorded), firearms or jumping from high places, but decreases were recorded for every other group.

The distribution of suicide in separate areas of the country was given in detail for the period 1931–35 in Table XCVII of the Review for 1935, and an analysis of suicides by poisoning according to the substance employed was given for the period 1933–35 in Table XCIV of that Review.

186 (part.).—**Accidental deaths—Air Transport.**—There were 99 deaths from air accidents (92 of males and 7 of females), compared with 74, 43, 49, 67 and 61 in the years 1931 to 1935. The record of the deaths of males by age for 1936, given in the subsidiary classification of Table 25, page 342, was incorrect,* and the correct figures are shown in Table LXXXIV, together with those of the preceding 5 years. Out of a total of 367 deaths of males in 1931–36, 139 were at ages 20–25 and 155 at 25–35.

Table LXXXIV.—Accidental deaths—Air Transport, by sex and age. 1931–1936.

	Males						Females	
	1931	1932	1933	1934	1935	1936	1931–35	1936
Under 15 ..	—	1	2	—	—	—	—	—
15–	5	1	1	5	3	4	1	1
20–	32	18	18	15	24	32	3	1
25–	25	18	23	33	21	35	8	3
35–	6	2	3	6	7	16	5	2
45–	1	—	—	1	—	4	1	—
55–	1	—	—	—	1	1	—	—
65–and over ..	—	—	—	2	—	—	1	—
All ages ..	70	40	47	62	56	92	19	7

186 (part). **Crushing by Motor and other Vehicles (not on railways).**—Apart from 446 deaths on railways and 99 caused by aircraft, there were 5,439 accidental deaths attributed to mechanically-propelled vehicles in 1936, 4,020 of males and 1,419 of females. The rate of mortality per million persons was 133 compared with 131 in 1935, 151 in 1934, 147 in 1933, 141 in 1932, 147 in 1931 and

* The total deaths of males due to all forms of transport shown on p. 340 (Part 1) are affected by the same error, and should be corrected as follows :—5,093 at all ages ; 428 at 15–20 ; 721 at 20–25 ; 798 at 25–35 ; 552 at 35–45 ; 550 at 45–55 ; 595 at 55–65.

159 in 1930. In Table LXXXV, the allocation of deaths to the different types of mechanically-propelled road vehicles is shown. The group "motor omnibus" includes, in each year, deaths due to trolley buses. The deaths classified as "Others" in 1936 are made up as follows :—

Motor cab, 17; motor coach, 33; motor tractor, 10; steam roller, 4; other or undefined motor, 11, and collisions involving a motor vehicle without statement as to which of the vehicles caused the death, 1,589.

Table LXXXV.—Deaths, and Death Rates per Million Living, caused by various Types of Road Motor Vehicles in each year—1929–36.

	Deaths.								Rate per Million Living.							
	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.
Electric tram ..	89	73	74	52	66	69	51	65	2.2	1.8	1.9	1.3	1.6	1.7	1.3	1.66
Motor car ..	1,660	1,643	1,688	1,646	1,773	1,882	1,633	1,617	41.9	41.3	42.2	40.9	43.9	46.5	40.2	39.66
Motor van, lorry, etc.	1,162	1,273	1,209	1,111	1,180	1,290	1,170	1,059	29.3	32.0	30.2	27.6	29.2	31.9	28.8	25.99
Motor omnibus ..	584	692	529	447	421	413	369	384	14.7	17.4	13.2	11.1	10.4	10.2	9.1	9.44
Motor cycle ..	1,162	1,286	1,083	983	965	875	733	650	29.3	32.3	27.1	24.5	23.9	21.6	18.0	15.99
Others ..	1,095	1,375	1,309	1,432	1,529	1,583	1,355	1,664	27.6	34.5	32.7	35.6	37.9	39.1	33.3	40.77
Total motor vehicles	5,752	6,342	5,892	5,671	5,934	6,112	5,311	5,439	145.2	159.3	147.3	141.1	147.1	151.0	130.7	133.22

Lack of specification of the vehicle causing death in the last group renders the analysis of Table LXXXV less complete than it would otherwise have been. It has not hitherto been practicable to distinguish between the occupants of vehicles, pedestrians and cyclists from the records of death certification, but such an analysis has been made for 1936.

Deaths attributed to the motor or trolley omnibus declined progressively from 1930 to 1935 but increased in 1936, the total registered deaths in the causation of which this type of vehicle was concerned (alone or in collision with some other vehicle) being 852, 699, 595, 559, 537, 474 and 528 in the seven years 1930 to 1936. For the motor cycle the corresponding totals have been 2,091, 1,797, 1,783, 1,727, 1,621, 1,380 and 1,338, showing a continuous fall since 1930, but for the motor car this total, after remaining almost stationary from 1930 to 1932 (2,219, 2,257, 2,291) rose to 2,527 in 1933 and 2,700 in 1934, fell to 2,315 in 1935 and increased again to 2,500 in 1936.

Pedal cycles are known to have been concerned in or responsible for the following accidental deaths :—

		1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.
Pedal cycles alone ..	{ M	207	258	235	308	345	399	447	384
	{ F	47	61	84	95	105	152	159	118
Pedal cycle in collision with other vehicles ..	{ M	232	294	309	431	544	627	511	694
	{ F	23	34	35	49	64	99	77	116
Total	{ M	439	552	544	739	889	1,026	958	1,078
	{ F	70	95	119	144	169	251	236	234
	{ P	509	647	663	883	1,058	1,277	1,194	1,312

The recent rapid increase of such deaths, which was arrested in 1935, continued in 1936.

Table LXXXVI compares the mean annual death rates per million living due to accidents caused by all forms of road motor vehicles at various ages in 1936 with those in the two preceding years and the three triennial periods 1925-27, 1928-30 and 1931-33. The male rate at all ages is about three times the female rate. This excess is present at each age, but the ratio of male to female risk increases with age to a maximum about 7 at 20-25 and then declines to about 2 at ages over 55.

Table LXXXVI.—Death rates per Million living from All Accidents caused by Road Motor Vehicles, by Sex and Age. 1925-27, 1928-30, 1931-33, 1934, 1935, and 1936.

	Males.						Females.					
	1925-27.	1928-30.	1931-33.	1934.	1935.	1936.	1925-27.	1928-30.	1931-33.	1934.	1935.	1936.
0-	107	142	143	135	124	145	55	87	88	95	73	80
5-	195	250	242	229	193	188	92	129	133	126	105	105
10-	102	132	106	107	103	104	26	40	37	38	35	31
15-	151	231	238	251	192	210	32	50	52	70	49	65
20-	233	365	393	414	363	381	30	57	55	58	46	58
25-	146	221	228	234	199	193	22	31	33	32	33	34
35-	112	147	142	155	137	142	23	33	33	31	23	27
45-	134	166	160	192	158	160	36	57	53	49	46	45
55-	170	239	228	228	215	217	75	95	104	100	75	83
65-	301	400	395	405	348	322	140	190	186	185	192	180
75 and over	490	738	711	753	658	608	179	276	260	355	277	264
All ages	159	226	225	224	203	205	48	71	72	75	64	67

From 1925-27 to 1928-30 the male rate at all ages rose by 42 per cent. and the female rate by 48 per cent. The changes which took place in the mean rates from 1928-30 to 1931-33 were, however, remarkably slight, the female rates remaining almost unchanged at each age under 45, whilst the male rates showed a rise for young adults balanced by a fall for boys of school age and men over 35.

The mortality of children under 5 has not changed sensibly since 1928-30. For children aged 5-10 rates have declined considerably in recent years and that of boys again fell slightly in 1936; at 10-15 a slight improvement was again registered for girls. For young adults the rates were higher than in 1935 for each sex; at 35-65 no important changes occurred and at ages over 65 mortality was slightly lower. The groups showing no appreciable improvement since 1928-30 are males aged 20-25 and 35-55, and females aged 20-25. As indicated in the Review for 1933, there are three ages of maximal risk, 5-10, 20-25 and 75 upwards, depending upon the fact that the death rates are the resultants of the combined risks to pedestrians, cyclists and occupants of motor vehicles.

Table LXXXVII divides the deaths from road accidents for 1936 not only by the type of vehicle causing the accident but according to

whether the person killed was a pedestrian, rider of a pedal cycle, rider of a motor-cycle or occupant of a vehicle other than a pedal or motor-cycle and whether resident in Greater London, a county borough, other urban district or rural district. This information was obtained with regard to 5,875 out of the 5,888 deaths. In the final column the deaths have been expressed as rates per million residents of the areas in question.

In the country as a whole 2,962 of the deaths, or 50·4 per cent. of the number for which the information was given, were of pedestrians, 1,194 or 20·3 per cent. were of pedal cyclists, 1,071 or 18·2 per cent. were of motor-cyclists and the remaining 648 or 11·0 per cent. were of occupants of cars or other vehicles. When divided according to sex and area of residence, the proportions are as follows :—

			Percentage of all road deaths for the specified sex and area							
			Pedes- trians		Pedal cyclists		Motor cyclists		Occupants of vehicles	
			M.	F.	M.	F.	M.	F.	M.	F.
England and Wales	..		44	71	23	12	22	7	11	10
Greater London	..	..	47	74	23	9	19	8	11	9
County boroughs	..	..	51	73	19	8	17	8	13	11
Other urban districts	..		42	71	23	11	24	6	11	12
Rural districts	..	..	35	65	27	20	28	7	10	8

Amongst males, motor-cyclists comprise 28 per cent. and pedestrians 35 per cent. of the deaths of rural residents, whereas motor-cyclists form less than 20 per cent. and pedestrians about 50 per cent. of the deaths of residents in large towns. Amongst females, pedal cyclists comprise 20 per cent. of the deaths of rural residents compared with only about 10 per cent. for town residents.

The percentage ratio of male to female deaths is 177 for pedestrians, 594 for pedal cyclists, 910 for motor cyclists and 335 for occupants of vehicles.

The percentage distributions of deaths of pedestrians according to the vehicles causing the accident in each area were as follows :—

	Greater London	County boroughs	Other urban areas	Rural districts
Motor cycles*	6	6	8	9
Motor cars†	40	39	44	44
Other motor vehicles ..	48	46	41	34
Horse vehicles	1	2	1	3
Pedal cycles, other or un- defined	5	7	6	10

* Including collisions with pedal cycle, motor car, van, lorry or bus.

† Including collisions with pedal cycles.

Table LXXXVII.—Deaths of Pedestrians, Pedal Cyclists, Motor Cyclists and Occupants of Other Vehicles in Road Accidents, according to sex, class of area of residence and type of vehicle involved, 1936.

Area of residence of deceased and type of vehicle(s) causing accident	Pedestrians		Pedal cyclists		Motor cyclists		Occupants of vehicles (not cycles)		Not stated		Totals		Deaths per million population	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<i>England and Wales.</i>														
Motor cycle	119	79	7	1	390	48	—	—	1	—	517	128	26	6
" " and pedal cycle ..	4	—	36	3	32	7	—	—	1	—	73	10	4	0
" " " motor car ..	6	1	2	—	270	31	7	3	1	—	286	35	15	2
" " " motor van, lorry	3	—	—	1	191	14	—	—	1	—	195	15	10	1
" " " motor bus ..	—	—	—	—	44	3	—	—	—	—	44	3	2	0
Motor car*	770	463	395	68	7	—	188	89	5	2	1,365	622	70	29
Motor van or lorry*	583	302	243	37	7	—	108	4	—	—	941	343	48	16
Motor or trolley bus	193	122	15	6	1	—	28	17	1	—	238	145	12	7
Motor charabanc or coach ..	13	11	1	—	1	—	6	1	—	—	21	12	1	1
Other motor vehicles	21	7	1	—	—	—	9	—	—	—	31	7	2	0
Collisions of motor vehicles	9	2	68	13	22	3	122	35	—	1	221	54	11	3
Other horse vehicles	50	7	1	—	—	—	31	—	—	—	82	7	4	0
Pedal cycles, other or undefined vehicles	123	74	253	43	—	—	—	—	—	—	376	117	19	6
Total	1,894	1,068	1,022	172	965	106	499	149	10	3	4,390	1,498	224	71
<i>Greater London residents.</i>														
Motor cycle†	21	19	16	—	157	28	2	1	1	—	191	48	48	11
Motor car*	151	119	70	16	2	—	47	20	3	1	273	156	68	34
Motor van or lorry*	147	75	64	5	1	—	21	1	—	—	233	81	58	18
Motor or trolley bus	34	32	4	2	—	—	—	3	—	—	38	37	9	8
Other motor vehicles (including collisions)	23	8	15	4	6	2	23	6	—	—	67	20	17	4
Horse vehicles	6	3	—	—	—	—	2	—	—	—	8	3	2	1
Pedal cycles, other or undefined vehicles	23	13	36	5	—	—	—	—	—	—	59	18	15	4
Total	405	269	199	32	166	30	95	31	4	1	869	363	216	80
<i>County Borough residents.‡</i>														
Motor cycle†	34	20	9	1	182	32	2	—	—	—	227	53	37	8
Motor car*	222	131	73	8	1	—	39	29	—	1	335	169	55	25
Motor van, bus or other motor vehicles (including collisions) ..	277	133	91	17	8	1	103	16	—	1	479	168	79	25
Horse vehicles	15	4	—	—	—	—	6	—	—	—	21	4	3	1
Pedal cycles, other or undefined vehicles	33	26	50	10	—	—	—	—	—	—	83	36	14	5
Total	581	314	223	36	191	33	150	45	—	2	1,145	430	188	64
<i>Urban District residents.§</i>														
Motor cycle†	40	27	13	—	278	23	1	2	1	—	333	52	57	8
Motor car*	223	130	115	20	3	—	57	29	2	—	400	179	68	28
Motor van, bus or other motor vehicles (including collisions) ..	212	119	89	14	8	—	73	19	—	—	382	152	65	24
Horse vehicles	11	—	—	—	—	—	7	—	—	—	18	—	3	—
Pedal cycles, other or undefined vehicles	27	18	70	13	—	—	—	—	—	—	97	31	17	5
Total	513	294	287	47	289	23	138	50	3	—	1,230	414	210	66
<i>Rural District residents.§</i>														
Motor cycle†	37	14	13	4	310	20	2	—	2	—	364	38	100	10
Motor car*	174	83	137	24	1	—	45	11	—	—	357	118	98	32
Motor van, bus or other motor vehicles (including collisions) ..	126	77	65	14	8	—	53	12	1	—	253	103	69	28
Horse vehicles	18	—	1	—	—	—	16	—	—	—	35	—	10	—
Pedal cycles, other or undefined vehicles	40	17	97	15	—	—	—	—	—	—	137	32	38	9
Total	395	191	313	57	319	20	116	23	3	—	1,146	291	314	79

* Including collisions with pedal cycles.

† Including collisions with pedal cycle, motor car, van, lorry or bus.

‡ Outside Greater London.

The final column of Table LXXXVII shows that the death rate amongst males resident in rural districts resulting from road accidents in general was 314 per million compared with about 200 amongst males resident in towns. This rural excess is chiefly due to motor cycle accidents, causing a male rural mortality of 100 per million, compared with 37 for males resident in county boroughs and 48 for males resident in Greater London, partly to motor car accidents (98 compared with about 65 in towns), partly to pedal cycle and miscellaneous vehicles (38 compared with about 15) and partly to horse vehicle accidents (10 compared with about 3 per million for males resident in towns). For females, residence in rural districts does not impose so large an excess of mortality from road accidents, the rate of 79 per million being similar to that for Greater London, though larger than for females resident in county boroughs.

199, 200. **Ill-defined Diseases.**—These headings in the International List of Causes of Death, to which 1,202 deaths have been allocated, exclude the ill-defined diseases of infancy and old age, 158 and 162 (*b*). In the more comprehensive sense resulting from their inclusion, the deaths from ill-defined causes in 1936 numbered 18,714, or 3·77 per cent. of the total as compared with 3·96 in 1935, 3·78 in 1934, 3·89 in 1933, 4·19 in 1932 and 9·67 in 1911.

Inquiries sent to medical practitioners and coroners requesting further information as to indefinitely certified deaths amounted to 8,951, and to these 7,807 replies were received, with results to classification, some of the most important of which are set out in Table LXXXVIII.

The total additions to certain definite headings resulting from these inquiries were as follows:—To influenza, 34; to encephalitis lethargica, 76; to cerebro-spinal fever, 63; to tuberculosis of the respiratory system, 150; to other forms of tuberculosis, 70; to venereal diseases, 94; to cancer, 827; to diseases of the spinal cord, 37; to general paralysis of the insane, 8; to disseminated sclerosis, 13; to arterio-sclerosis, 69; to ulcer of stomach and duodenum, 126; to appendicitis, 63; to biliary calculi, 103; to chronic nephritis, 121; to diseases of the prostate, 236; to puerperal sepsis, 64; to congenital malformations, 69.

In addition to the foregoing, 2,779 inquiries were addressed to medical practitioners who had initialled statement “B” on the back of the new form of medical certificate, thereby indicating the possibility of their being in a position to furnish additional information respecting the certified cause of death as the result of a “post-mortem” or laboratory examination which was not available at the time of signing the certificate. Of the 2,477 replies received to these inquiries, 1,330 amended the original certification.

Anæsthetics.—The usual annual statement of deaths during or connected with the administration of an anæsthetic is continued. This is obtained by secondary tabulation of these deaths, since the

Table LXXXVIII.—Replies to Inquiries respecting Indefinitely Certified Causes of Death, 1936.

Subject of Inquiry.	Replies received.	Replies amplifying previous information.	Deaths allocated as the result of inquiry to certain headings.
Croup	3	2	Laryngitis 1.
Membranous Laryngitis	4	4	Diphtheria 1, Laryngitis 3.
Pyæmia, Septicæmia, etc.	110	97	Diseases of the Teeth and Gums 5, Diseases of the Tonsils 23, Diseases of the Skin 16.
Tuberculosis	85	84	Tuberculosis of the Respiratory System 46, Tuberculosis of Intestines and Peritoneum 5, Tuberculosis of Other Bones and Joints 4, Tuberculosis of Skin and Subcutaneous Tissues 1, Tuberculosis of Lymphatic System 2, Disseminated Tuberculosis 3, Other Forms of Tuberculosis 6.
Cancer (part or organ not stated).	1,068	1,019	Part or Organ stated in 1,004 cases.
Cerebral Tumour (P.M. Cases)	312	289	Tuberculosis of Central Nervous System 5, Syphilis 1, Cancer 151, Glioma 62.
Tumour of other sites	808	709	Syphilis 4, Cancer 542.
Rheumatism	728	727	Rheumatic Fever 185, Chronic Rheumatism 3, Rheumatoid Arthritis 3, Rheumatic Heart Disease 518.
Encephalitis	148	132	Influenza 8, Polioencephalitis 2, Encephalitis Lethargica 66, Other forms of Encephalitis 31.
Basal or Basic Meningitis.	22	20	Cerebro-Spinal Fever 5, Tuberculosis of Central Nervous System 3, Meningitis—Other Forms 7.
Posterior or Post Basal or Post Basic Meningitis.	26	25	Cerebro Spinal Fever 15, Tuberculosis of Central Nervous System 1, Meningitis—Other Forms 7.
Cerebro spinal Meningitis.	49	49	Influenza 1, Cerebro Spinal Fever 41, Tuberculosis of Central Nervous System 1, Meningitis—Other Forms 4.
Spinal Sclerosis	6	6	Tabes Dorsalis 1, Other Diseases of the Spinal Cord 2, Disseminated Sclerosis 3.
Paraplegia	36	35	Other Diseases of the Spinal Cord 8, Disseminated Sclerosis 3.
General Paralysis (outside asylums).	14	13	General Paralysis of the Insane 5.
Paralysis	43	43	Disseminated Sclerosis 2.
Aortitis, Arteritis and Endarteritis.	90	74	Syphilis 35, Aneurysm 1, Arterio Sclerosis 4.
Fibroid Phthisis	63	63	Tuberculosis of the Respiratory System 52, Chronic Interstitial Pneumonia 3.
Hæmoptysis	12	12	Tuberculosis of the Respiratory System 6.
Stomatitis	12	12	Thrush, Aphthous Stomatitis 1.
Stricture of Œsophagus	19	17	Cancer 6.
Hæmatemesis	43	40	Cancer 10, Ulcer of Stomach or Duodenum 19.
Pyloric Stenosis, Obstruction, etc.	46	43	Cancer 10, Ulcer of Stomach or Duodenum 22.
Jaundice	39	36	Cancer 3, Biliary Calculi 10.

Table LXXXVIII.—*continued.*

Subject of Inquiry.	Replies received.	Replies amplifying previous information.	Deaths allocated as the result of inquiry to certain headings.
Peritonitis	79	67	Tuberculosis of Intestines and Peritoneum 4, Cancer 2, Ulcer of Stomach or Duodenum 4, Appendicitis 14, Hernia 1, Intestinal Obstruction 4, Diseases of the Female Genital Organs 3.
Pemphigus of Infants	43	41	Syphilis 5.
Hydrocephalus ..	50	50	Congenital Hydrocephalus 38.
Violence	448	446	Precise Form of Suicide 114, Injury by Fall 59, Injury in Mines and Quarries 17, Injury by Crushing 122.
Syncope, Heart Failure	160	148	Diseases of the Heart 113, Arterio Sclerosis 7, Bronchitis 5.
Operation	723	722	Cancer 40, Tumours of Female Genital Organs 47, Ulcer of Stomach or Duodenum 37, Appendicitis 18, Hernia, Intestinal Obstruction 46, Biliary Calculi 73, Other Diseases of the Gall Bladder 32, Diseases of the Prostate 162, Diseases of the Female Genital Organs 50, Congenital Malformations 3, Violence 12.
Other Indefinite Forms of Certification.	2,518	2,309	—
Total ..	7,807	7,334	—

In addition 1,853 inquiries were made in connection with parturition.

primary tabulation, represented by Table 21, classifies all such deaths to the disease or injury on account of which the anæsthetic was administered.

The total number of deaths in Table LXXXIX, 839, is 31 less than in 1935, which was the largest number recorded. During the years for which fully comparable figures can be stated these deaths first increased slowly from 276 in 1911 to 366 in 1920, declined to 336 in 1922, rose to 446 and remained about that level to 1925. They then increased rapidly to 730 in 1929, and have risen further during the last seven years.

For the years before 1911 the record is contained in the tables of accidental deaths, but certain causes—strangulated hernia and cancer—were at that time preferred in tabulation to the anæsthetic used. In 1936 the 839 deaths included 92 associated with cancer, and 53 with hernia. So for comparison with the years prior to 1911 the number of deaths should be reduced to 694.

Subject to this allowance for the more comprehensive nature of the figures from 1911 onwards, Table XC provides a record of the deaths since 1901 by sex and age.

Table LXXXIX.—Deaths under or connected with the Administration of various Anæsthetics, according to Sex and Age—1936.

Anæsthetic.		All Ages.	Age.													
			0—	1—	5—	10—	15—	20—	25—	30—	35—	40—	45—	50—	55—	65—
Chloroform	{M. F.	33 36	1 —	5 1	3 1	— 1	3 1	3 6	— 7	— 4	3 8	1 2	2 1	1 1	9 1	2 2
Chloroform and ether	{M. F.	88 62	— 2	7 1	7 3	3 2	6 1	4 2	6 8	4 10	5 5	7 5	2 4	6 4	15 14	16 1
Chloroform, ether and ethyl chloride ..	M.	3	1	—	1	—	—	—	—	—	—	1	—	—	—	—
Chloroform and ethyl chloride..	{M. F.	1 2	— —	1 1	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— 1	— —
Chloroform, ether and avertin..	M.	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
Ether	{M. F.	134 122	10 3	14 15	12 12	6 3	2 1	8 10	9 4	11 11	3 6	7 8	13 7	8 10	19 14	12 18
Ether and ethyl chloride	{M. F.	54 34	6 1	12 8	10 5	4 1	2 —	1 1	3 3	2 2	1 4	2 2	1 2	1 2	4 3	5 —
Ether and avertin	{M. F.	2 4	— —	— —	— —	— —	1 —	— —	— 1	— —	— —	— —	1 1	— 2	— —	— —
Ether and nembatal	M.	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—
Ether and percaine	F.	2	—	—	—	—	—	—	—	—	—	—	—	1	1	—
Ether and planocaine	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Ether and stovaine	F.	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Ether, avertin and novocaine ..	M.	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
Ether, ethyl chloride and novocaine ..	M.	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
Ether, evipan, hyoscine and omnopon	F.	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
Ether, omnopon and scopolamine ..	M.	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Ethyl chloride	{M. F.	11 12	— 3	3 3	2 —	1 —	1 —	— 2	— 1	1 —	— 2	— —	— —	— —	2 —	1 —
Ethyl chloride and avertin	F.	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
A.C.E.	{M. F.	1 4	— 1	— 1	— —	— —	— —	— 1	— —	— —	— —	— —	— —	— —	— 1	1 —
Nitrous oxide	{M. F.	36 33	— —	4 1	1 4	1 —	— 1	5 2	2 1	1 4	2 2	2 1	— 3	2 1	6 7	10 6
Avertin	{M. F.	2 8	— —	— —	— 1	— —	— —	— 1	— 1	— —	1 2	— —	— 1	— —	1 1	— 1
Cocaine	{M. F.	2 2	— —	— —	— —	— —	1 —	— —	— —	— —	— —	— —	— —	— 1	1 —	— 1
Codrenin	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Cyclopropane	M.	2	—	—	—	—	—	—	—	1	—	—	1	—	—	—
Decicaine	{M. F.	1 7	— —	— —	— —	— —	— —	— —	— —	— 2	— —	— 1	— 1	— 1	1 —	— 2
Durocaine	{M. F.	2 4	— —	— —	— —	— —	— —	— —	— —	— —	1 —	— —	— 1	— —	1 1	— 2
Ethocaine	F.	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
Evipan	{M. F.	12 5	— —	— —	— —	— —	— —	— —	— —	— 1	— 1	— —	2 —	4 1	3 1	3 1

Table LXXXIX.—*continued.*

Anæsthetic.	All Ages.	Age.													
		0—	1—	5—	10—	15—	20—	25—	30—	35—	40—	45—	50—	55—	65—
Evipan and cocaine M.	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—
Evipan, novocaine and omnopon .. F.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Novocaine {M.	10	—	—	—	—	—	—	—	1	—	—	—	—	1	8
	F. 9	—	—	—	—	—	—	—	1	2	1	—	—	2	3
Omnopon, scopolamine and nembutal M.	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
Percaine {M.	23	1	—	—	1	—	—	—	—	1	—	1	2	7	10
	F. 17	—	—	—	—	—	—	1	1	—	4	3	—	6	2
Phenocain F.	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Planocaine {M.	2	—	—	—	—	—	—	—	—	—	—	1	—	—	1
	F. 3	—	—	—	—	—	—	—	1	—	1	—	—	—	1
Spinocaine {M.	4	—	—	—	—	—	—	—	—	—	—	1	1	—	2
	F. 2	—	—	—	—	—	—	—	—	—	—	1	—	—	1
Stovaine {M.	3	—	—	—	—	—	—	—	—	—	—	—	—	2	1
	F. 3	—	—	—	—	—	—	1	1	—	—	—	—	—	1
Tropocaine M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Kind not stated {M.	18	1	2	—	1	—	—	1	1	2	—	1	—	4	5
	F. 8	—	—	—	—	—	1	1	1	1	—	1	2	—	1
Total {M.	453	20	49	36	17	17	22	21	23	19	20	27	30	73	79
	F. 386	10	31	26	7	4	27	29	40	33	26	27	27	55	44

The increase since 1911–15 has been relatively more rapid amongst females (233 per cent.) than amongst males (171 per cent.), and has been greatest at ages over 55, and least for males aged 35–45.

The anæsthetic agents recorded on death certificates have altered considerably in recent years, as may be seen from Table XCI. A further increase is recorded in 1936 in the deaths associated with ethyl chloride in combination with ether, which numbered 88, and with ethyl chloride alone, which reached 22.

It need scarcely be pointed out that these fatalities depend upon the extent to which the various agents are used as well as upon the risk attaching to them. But unfortunately the deaths associated with each type of anæsthetic cannot be collated with the number of its administrations. It is not even possible to say whether, or to what extent, the rapid increase in the number of these deaths implies increased mortality under anæsthetics. The number of administrations is known to be increasing, but cannot be estimated. The deaths tabulated, moreover, can only be those under, not those caused by, anæsthesia. It is impossible from certification to distinguish between deaths from operation under anæsthesia and deaths due to the anæsthetic itself.

Of the 839 deaths in 1936 shown in Table XC, 702 (84 per cent.) were classed to the 24 headings enumerated in Table XCII, the remainder being of very varied causation.

Table XC.—Deaths under or associated with Anæsthesia
1901–36.

Year.	Males.									Females.								
	All ages	0–	5–	15–	25–	35–	45–	55–	65–	All ages	0–	5–	15–	25–	35–	45–	55–	65–
Yearly average :																		
1901–05* ..	95	14	20	9	13	16	11	7	4	53	6	9	7	11	8	8	3	2
1906–10* ..	125	26	20	12	16	18	16	9	8	77	7	14	9	18	11	10	4	3
1911–15 ..	167	30	23	14	20	28	24	16	10	116	14	17	15	16	22	18	10	5
1916–20 ..	188	36	25	25	27	22	20	19	13	119	11	16	14	21	22	17	7	9
1921–25 ..	229	40	28	20	18	27	36	37	24	169	20	17	17	30	29	25	17	12
1926–30 ..	361	56	47	30	26	37	50	62	53	288	29	29	29	44	51	49	34	23
1931–35 ..	432	63	48	37	33	43	56	80	71	353	34	40	36	60	55	50	43	35
1921 ..	204	30	29	16	16	19	34	30	30	133	16	23	16	24	21	19	11	3
1922 ..	185	29	21	16	9	27	30	35	18	151	16	15	12	29	31	26	12	10
1923 ..	262	45	37	29	17	38	35	34	27	184	22	23	14	23	32	32	23	15
1924 ..	245	51	30	21	25	21	42	39	16	184	26	11	30	29	31	21	18	18
1925 ..	249	43	25	17	23	28	39	45	29	193	22	14	15	43	32	29	23	15
1926 ..	306	57	43	23	29	34	39	43	38	250	32	22	29	35	44	51	23	14
1927 ..	328	43	51	25	20	30	42	70	47	268	24	28	29	46	47	40	35	19
1928 ..	384	63	41	30	23	43	55	67	62	272	29	21	27	44	45	44	33	29
1929 ..	414	66	61	31	25	43	63	64	61	316	35	35	27	52	52	50	43	22
1930 ..	375	51	41	39	34	34	52	68	56	332	27	39	33	45	66	58	35	29
1931 ..	413	60	51	44	36	41	51	73	57	310	27	40	23	60	55	43	38	24
1932 ..	416	66	49	37	29	45	58	68	64	333	24	40	33	60	58	42	36	40
1933 ..	425	67	47	44	22	42	56	78	69	343	35	39	47	50	44	48	47	33
1934 ..	440	66	45	29	37	43	48	91	81	374	43	43	38	67	45	53	46	39
1935 ..	467	57	47	31	43	45	68	91	85	403	42	37	37	63	75	64	47	38
1936 ..	453	69	53	39	44	39	57	73	79	386	41	33	31	69	59	54	55	44

Deaths in later periods compared with those of 1911–15 taken as 100.

Yearly average :																		
1911–15 ..	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1916–20 ..	113	120	109	179	135	79	83	119	130	103	79	94	93	131	100	94	70	180
1921–25 ..	137	133	122	143	90	96	150	231	240	146	143	100	113	188	132	139	170	240
1926–30 ..	216	187	204	214	130	132	208	388	530	248	207	171	193	275	232	272	340	460
1931–35 ..	259	210	209	264	165	154	233	500	710	304	243	235	240	375	250	278	430	700
1931 ..	247	200	222	314	180	146	213	456	570	267	193	235	153	375	250	239	380	480
1932 ..	249	220	213	264	145	161	242	425	640	287	171	235	220	375	264	233	360	800
1933 ..	254	223	204	314	110	150	233	488	690	296	250	229	313	313	200	267	470	660
1934 ..	263	220	196	207	185	154	200	569	810	322	307	253	253	419	205	294	460	780
1935 ..	280	190	204	221	215	161	283	569	850	347	300	218	247	394	341	356	470	760
1936 ..	271	230	230	279	220	139	238	456	790	333	293	194	207	431	268	300	550	880

* Excluding deaths from cancer and strangulated hernia—see page 144.

The numbers of deaths reported from different classes of institutions, etc., in various regions of the country are stated in Table XCIII, in which, as place of occurrence is evidently of more interest for these deaths than place of residence, they have been tabulated by area of registration.

Compared with the previous year, the deaths in Greater London Public Assistance Institutions declined by 10, in the Northern hospitals by 47, and in hospitals of the East and South East, excluding London, by 30, but they increased in hospitals of the Midlands by 36, of the South West by 19 and of Wales by 4.

Table XCI.—Deaths under or associated with the Administration of Various Anæsthetics in each year, 1922 to 1936.

	Sex.	Average 1922- 25.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.
<i>Anæsthetics of the Methane series:—</i>													
Chloroform (alone) .. {	M.	48	54	48	75	63	51	58	52	52	34	38	33
	F.	33	47	53	36	41	37	37	36	31	34	27	36
Ether (alone) {	M.	58	105	101	118	142	126	134	130	134	135	156	134
	F.	46	67	72	108	121	130	114	118	115	117	132	122
Chloroform and ether {	M.	75	89	100	120	116	115	126	103	91	104	80	88
	F.	51	78	69	80	93	87	79	68	87	76	56	62
A.C.E. mixture .. {	M.	8	9	9	5	3	1	10	3	4	4	2	1
	F.	5	8	2	—	6	3	—	5	1	—	5	4
Ether and ethylchloride {	M.	2	10	15	9	12	16	28	24	31	35	34	54
	F.	1	7	17	7	13	16	10	19	26	34	43	34
Other mixtures, in- cluding chloroform or ether.* {	M.	3	4	4	6	8	5	2	8	6	11	7	11
	F.	4	7	7	3	4	5	8	11	11	12	16	12
Ethanosal {	M.	1	—	—	—	—	—	—	—	—	—	—	—
	F.	2	—	—	—	—	—	—	—	—	—	—	—
Ethyl chloride (alone) {	M.	3	4	8	6	7	6	3	7	8	13	9	11
	F.	3	3	6	3	3	4	11	7	4	5	7	11
Barbituric Acid group— Nembutal, Evipan {	M.	—	—	—	—	—	—	—	—	1	5	18	12
	F.	—	—	—	—	—	—	3	—	1	9	18	5
Avertin (alone) .. {	M.	—	—	—	—	1	1	2	5	5	3	11	2
	F.	—	—	—	—	1	1	3	4	4	6	5	7
Avertin with cocaine derivative. {	M.	—	—	—	—	—	—	—	—	—	—	1	—
	F.	—	—	—	—	—	—	1	2	—	—	—	—
Nitrous oxide {	M.	7	9	13	18	27	23	21	36	34	33	43	36
	F.	4	6	19	12	11	18	22	27	24	35	31	33
Opium or Morphine and their preparations with atropine, hyoscine or co- caine derivative. {	M.	0	—	1	—	—	1	—	1	—	—	—	—
	F.	—	—	—	—	—	1	1	1	—	—	—	—
<i>Cocaine and its prepara- tions and substitutes (without any of above):—</i>													
Stovaine {	M.	4	3	4	2	3	4	2	6	5	7	8	2
	F.	3	6	5	3	6	3	2	6	5	10	9	3
Novocaine {	M.	2	2	5	9	12	10	6	20	18	18	9	10
	F.	2	1	3	6	3	11	4	9	8	7	11	9
Percaine {	M.	—	—	—	—	—	1	7	10	11	18	12	21
	F.	—	—	—	—	1	2	6	13	13	18	12	17
Others {	M.	—	2	4	2	7	3	7	8	18	13	17	14
	F.	1	3	1	4	4	2	4	5	10	7	12	19
<i>Miscellaneous or unspeci- fied, including combina- tions of, or containing the above, not distinguished.</i>	M.	24	15	16	14	13	12	7	3	7	7	22	24
	F.	25	17	14	10	9	12	5	2	3	4	19	12
Total {	M.	235	306	328	384	414	375	413	416	425	440	467	453
	F.	178	250	268	272	316	332	310	333	343	374	403	386

* Including combinations of chloroform or ether with morphia, atropine, nembutal or cocaine derivatives or substitutes.

Table XCII.—Classification of Deaths under or Associated with Anæsthesia, 1936.

	Cause to which Death was assigned.	Males.	Females.		Cause to which Death was assigned.	Males.	Females.
24-32	Non-respiratory tuberculosis	8	3	122 a	Hernia	40	13
45-53	Cancer	54	38	122 b	Intestinal obstruction.	28	15
54a	Non malignant tumours of female genital organs.	—	14	126	Biliary calculi ..	1	9
66a	Simple goitre ..	1	9	127	Diseases of the gall bladder.	3	6
66 b	Exophthalmic goitre	3	18	129	Peritonitis.. ..	—	3
89 b	Diseases of the mastoid sinus.	18	14	137	Diseases of the prostate.	19	—
104	Diseases of the nasal fossæ and annexa.	7	1	138 (pt.)	Circumcision ..	4	—
110 : 1	Empyema.. ..	8	5	139	Diseases of female genital organs.	—	17
115 : 1	Extraction of teeth.	10	8	140-150	Childbirth and abortion.	—	61
(pt.)				154	Acute infective osteomyelitis.	4	4
115 : 3	Diseases of the tonsils.	30	17	157	Congenital malformations.	9	9
117	Ulcer of the stomach or duodenum.	31	6	163-198	Violence	45	23
121	Appendicitis ..	50	36				

Table XCIII.—Deaths under Anæsthetics Registered in 1936. Distribution by Part of Country and Place of Occurrence.

	Greater London.	South-East ex Greater London.	North	Midland.	East	South-West.	Wales	Totals England and Wales.
Hospitals {M.	86	39	111	60	12	27	20	355
.. .. {F.	68	37	85	48	8	13	17	276
Public Assistance Institutions {M.	32	3	24	13	2	—	3	77
.. .. {F.	21	4	26	7	—	—	—	58
Mental Hospitals .. {M.	—	—	—	—	—	—	—	—
.. .. {F.	—	1	1	1	—	—	—	3
Nursing Homes {M.	3	1	4	—	1	—	2	11
.. .. {F.	7	3	11	3	1	—	1	26
Elsewhere {M.	1	—	6	3	—	—	—	10
.. .. {F.	1	4	12	1	2	1	2	23
Total {M.	122	43	145	76	15	27	25	453
.. .. {F.	97	49	135	60	11	14	20	386

There were in 1936 36 deaths under anæsthetics in which record was made of the presence of *status lymphaticus* but which have been referred in tabulation to the condition occasioning

the administration of the anæsthetic. The sex and age distribution of these was as follows :—

			All Ages.	0—	5—	10—	15—	20—	25—	35—	45—	55—
Males	..	..	28	16	5	1	2	3	—	1	—	—
Females	..	..	8	2	—	1	1	—	2	1	—	1

Seasonal Distribution of Mortality.

In Table LX of the Review for 1925 and Table LXV of the Review for 1931, the average numbers of deaths occurring per day from the more important causes in England and Wales were given for each calendar month in the quinquennial periods 1921–25 and 1926–30 respectively. Table XCIV gives a similar analysis of monthly mortality during 1931–35, based as before on the dates of occurrence of the deaths and not on the dates of registration. As was pointed out in 1931, the most important factors responsible for the year to year variations affecting mortality in general are, under present conditions, the occurrence or non-occurrence of influenza epidemics on the one hand and the severity of the winter on the other, and although a period of five years generally suffices to smooth out the effect of the climatic variations alone on mortality, quinquennial monthly rates for some causes of death remain considerably influenced by the inclusion of such a year as 1929 with its severe influenza epidemic. Thus the average number of deaths per day from influenza was 34·8 in 1931–35 compared with 40·0 in 1926–30, but on the other hand the mean air temperature of the March quarter was lower in 1931–35, being 40·9°F. compared with 41·8°F. in 1926–30 and 42·5°F. in 1921–25.

Comparison between the monthly averages in successive quinquennial periods will indicate whether the downward or upward trend of mortality from a given cause is more pronounced in one season than another, but for any absolute measure of the mortality trends it would be necessary to take into account the changes in numbers and the age constitution of the populations at risk. This can be done by multiplying the monthly average of deaths by the ratio of the standardized death rate in the quinquennium from the cause in question to the average deaths per day in the whole period. Taking as examples the mortality from respiratory tuberculosis, influenza and all other causes combined, the percentage changes which occurred

Table XCIV.—England and Wales, 1931-1935 : Average Number of Deaths per day from certain causes during each month of the year and, in the case of certain Notifiable Diseases, the average number of notifications per day (*the figures relating to notifications being shown in italics*).

Cause (with International List No.)	1931- 1935	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
All causes	1,329	1,734	1,736	1,609	1,408	1,248	1,155	1,069	1,045	1,068	1,145	1,283	1,471
Causes other than Diseases of the Res- piratory System ..	1,180	1,455	1,458	1,376	1,242	1,129	1,063	999	980	996	1,049	1,149	1,279
1. Typhoid fever ..	0.476	0.413	0.482	0.452	0.440	0.439	0.447	0.368	0.484	0.513	0.606	0.653	0.419
7. Measles	3.39	2.04	2.59	2.12	2.42	2.46	2.85	4.13	4.70	5.39	5.11	4.15	2.55
8. Scarlet fever ..	7.53	8.75	12.1	16.3	15.5	10.6	7.32	4.12	2.72	1.64	1.97	3.94	5.67
9. Whooping cough ..	1.83	2.48	2.26	2.19	2.31	1.96	1.51	1.37	1.06	1.17	1.51	1.91	2.20
10. Diphtheria	313	327	304	303	279	271	255	257	228	316	407	428	380
11. Influenza	6.23	7.90	10.5	10.0	8.50	7.23	5.86	4.56	4.33	3.99	2.93	3.73	5.50
13. Dysentery	8.34	11.1	10.8	8.91	8.06	6.97	6.24	6.39	6.43	7.16	8.10	8.69	11.4
15. Erysipelas	151	189	172	149	128	125	124	127	114	151	174	184	178
16. Acute poliomyelitis..	34.8	116	112	66.1	35.2	16.3	8.71	4.41	3.88	5.27	9.68	15.7	28.2
17. Encephalitis lethargica	0.304	0.432	0.447	0.413	0.187	0.226	0.193	0.181	0.265	0.360	0.316	0.267	0.374
18. Cerebro-spinal fever	3.12	4.34	4.09	4.41	4.23	3.37	2.41	1.83	1.71	1.95	2.38	3.09	3.75
22. Tetanus	46.9	56.1	53.8	53.6	51.3	43.4	36.4	31.5	33.4	39.2	49.7	59.9	55.5
Tuberculosis :	0.415	0.329	0.383	0.258	0.313	0.297	0.373	0.361	0.606	0.740	0.542	0.367	0.406
23. Respiratory system	1.82	1.05	0.864	0.664	0.729	0.851	1.34	1.63	3.22	4.00	3.86	2.08	1.15
24. Nervous system ..	2.25	2.80	2.62	2.79	2.21	2.33	2.17	1.93	2.14	1.99	1.85	2.14	2.08
25. Intestines and peri- toneum	1.31	1.59	1.65	1.35	1.54	1.44	1.40	1.09	1.07	1.23	1.15	1.15	1.10
34. Syphilis	2.71	3.06	3.99	4.08	4.19	3.26	2.78	2.17	1.79	1.58	1.72	1.73	2.21
36. Septicæmia	4.41	5.43	7.11	6.75	6.91	5.53	4.16	3.65	2.83	2.59	2.53	2.54	3.20
44 (4) Varicella	0.318	0.239	0.284	0.316	0.353	0.297	0.387	0.329	0.400	0.413	0.323	0.240	0.232
45-53. Cancer	74.2	90.2	91.0	88.6	82.5	74.8	69.2	63.0	58.9	60.7	65.1	71.5	75.4
54 & 55. Tumours not returned as malignant ..	6.11	5.87	6.71	7.33	8.00	7.77	7.18	6.25	5.52	4.63	4.90	4.25	4.99
56. Rheumatic fever ..	2.54	2.57	2.91	2.86	3.09	2.86	2.71	2.52	2.22	2.41	2.09	2.15	2.17
57 (2) Rheumatoid and osteo- arthritis	3.58	4.14	4.16	4.38	3.61	3.35	3.08	3.04	2.88	3.29	3.61	3.66	3.84
58. Gout	2.03	2.35	2.19	2.14	2.07	2.01	1.97	1.63	1.67	1.65	1.83	2.47	2.34
59. Diabetes	0.118	0.194	0.149	0.168	0.173	0.103	0.0933	0.142	0.0710	0.0733	0.0774	0.0933	0.0839
63 (1) Rickets	169	172	172	169	166	167	168	168	168	170	169	171	174
66 (b) Exophthalmic goitre	7.76	8.05	8.13	7.85	7.63	7.95	7.51	7.47	7.43	7.54	7.56	8.11	7.91
67. Diseases of the thymus	3.42	4.02	4.33	3.68	3.85	3.19	3.27	2.96	2.81	2.79	3.23	3.12	3.83
68. Diseases of the adrenals	8.41	9.89	10.3	10.3	9.27	8.26	7.78	6.90	6.68	6.51	7.46	8.33	9.37
70 (a) Purpura	0.662	0.871	0.773	0.877	0.753	0.613	0.553	0.523	0.606	0.540	0.452	0.647	0.735
71 (a) Pernicious anæmia ..	17.2	20.9	20.6	19.4	17.9	16.2	14.5	14.1	13.8	14.8	16.2	17.8	20.0
72 (a) Leukæmia	0.665	0.839	0.957	0.968	0.887	0.735	0.633	0.400	0.465	0.527	0.471	0.560	0.561
72 (b) Aleukæmia	3.93	4.08	4.09	3.92	3.92	3.94	4.02	3.89	3.83	3.66	3.72	3.91	4.17
78-89. Diseases of the nervous system ..	0.400	0.432	0.624	0.394	0.467	0.342	0.393	0.342	0.265	0.413	0.465	0.387	0.297
79. Meningitis	0.573	0.581	0.674	0.574	0.500	0.703	0.553	0.587	0.503	0.527	0.535	0.560	0.581
80. Tabes dorsalis	0.760	0.871	0.730	0.877	0.893	0.813	0.727	0.645	0.710	0.807	0.619	0.733	0.690
82 (a), (b) Cerebral hæmorrhage 1 & 2. apoplexy, etc. ..	6.57	7.47	7.20	7.07	7.16	6.40	6.49	5.70	5.81	6.11	6.33	6.45	6.66
82 (b) 3. Cerebral softening ..	2.15	2.22	2.11	2.32	2.17	2.21	2.00	1.98	2.18	2.03	2.28	2.27	2.01
83. General paralysis of the insane	1.55	1.76	1.66	1.56	1.49	1.44	1.59	1.32	1.67	1.52	1.43	1.49	1.65
85. Epilepsy	109	129	131	128	116	107	99.3	93.7	89.3	91.8	97.8	108	121
86. Infantile convulsions	2.73	3.12	3.36	3.66	3.23	2.90	2.60	2.38	2.23	2.20	2.19	2.13	2.81
87 (c) Paralysis agitans ..	1.89	2.12	2.38	1.97	1.93	1.75	1.75	1.51	1.68	1.83	1.68	1.97	2.18
87 (d) Disseminated sclerosis	68.0	80.5	80.8	79.1	71.1	65.5	61.9	57.7	55.3	57.4	61.8	68.6	77.0
89. Diseases of the ear and mastoid sinus	0.804	0.929	1.05	1.02	0.833	0.781	0.760	0.735	0.710	0.593	0.639	0.800	0.819
90-95. Heart diseases ..	2.90	3.41	3.67	3.70	3.31	2.57	2.59	2.30	2.42	2.33	2.52	2.83	3.20
90. Pericarditis	5.93	7.02	7.03	6.77	6.49	6.05	5.37	5.41	4.99	4.89	5.16	5.61	6.39
91 (1) Malignant endocarditis	3.68	4.66	4.60	4.85	4.07	3.72	3.21	3.15	2.91	2.97	2.93	3.29	3.83
92. Valvular disease ..	68.2	85.8	84.2	80.1	74.1	66.1	60.3	56.2	53.4	56.1	61.1	67.4	74.4
92 (1) Aortic valve disease..	9.03	10.7	10.7	10.2	9.27	9.01	8.13	7.57	7.28	7.93	8.22	9.18	10.3
92 (2) Mitral valve disease..	26.6	34.2	33.4	31.0	28.7	25.5	23.3	22.1	20.2	21.7	23.9	26.1	29.1
93 (b) 1 Fatty heart ..	7.03	8.74	9.05	7.98	7.32	6.26	6.55	5.83	5.70	6.07	5.94	6.85	8.23
93 (b) 2 & Other myocardial disease	167	219	221	207	176	154	140	127	123	128	143	168	201
94. Angina pectoris ..	25.5	27.9	27.4	28.1	25.3	23.8	22.6	21.2	19.7	22.7	25.4	29.3	32.7
95 (a) Disordered action of heart	7.29	9.11	9.97	8.94	7.83	6.93	6.07	5.83	5.69	5.44	6.15	7.35	8.32
96. Aneurysm	3.73	4.19	4.15	4.20	4.17	3.50	3.41	3.15	2.96	3.29	3.80	3.98	4.04
97. Arterio-sclerosis ..	59.5	71.8	72.6	69.4	62.7	57.4	54.4	49.3	47.9	49.0	52.7	59.4	68.3

Table XCIV—*contd.*

Cause (with International List No.).	1931- 1935.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
97 (1 & 2) Arterio-sclerosis with cerebral vascular lesion ..	35.2	40.0	40.0	39.5	36.5	34.6	32.8	30.0	29.4	30.4	32.3	36.3	40.7
97 (3). Arterio-sclerosis without record of cerebral vascular lesion ..	24.3	31.7	32.2	30.0	26.2	22.8	21.6	19.3	18.5	18.6	20.4	23.1	27.6
98 (a). Senile gangrene ..	1.87	2.03	2.16	2.35	2.26	1.87	2.03	1.74	1.63	1.48	1.33	1.90	1.71
102. Abnormalities of blood pressure ..	0.932	0.981	1.00	0.968	0.933	0.871	0.840	0.903	0.781	0.987	0.884	0.913	1.12
104-114. Diseases of the respiratory system ..	149	279	279	233	167	119	92.4	69.8	65.2	72.5	96.1	133	192
104 (2) Diseases of the accessory nasal sinuses ..	0.591	0.555	0.582	0.729	0.687	0.600	0.540	0.497	0.652	0.467	0.555	0.653	0.574
106. Bronchitis ..	54.4	114	113	89.3	57.9	39.0	28.1	20.8	19.3	22.3	31.9	47.9	72.6
106 (a) Acute ..	14.1	33.8	33.0	24.9	14.5	8.85	5.65	3.44	3.32	4.34	7.52	11.9	19.5
106 (b) Chronic ..	19.7	35.9	35.5	29.9	21.5	15.7	12.0	9.57	9.06	10.1	13.0	18.8	26.0
107. Broncho-pneumonia ..	43.7	84.1	88.7	70.5	47.3	33.1	25.1	19.3	17.6	19.8	25.9	38.3	57.0
108. Lobar pneumonia ..	27.8	43.3	41.1	40.5	34.9	26.3	22.0	16.4	14.4	16.1	20.7	25.3	33.7
109. Pneumonia (not otherwise defined) ..	9.90	16.6	16.4	15.4	12.5	9.08	7.41	4.81	4.83	5.04	6.72	8.80	11.6
110 (1) Empyema ..	1.11	1.23	1.50	1.45	1.31	1.09	1.15	0.865	0.987	0.867	0.806	0.953	1.19
110 (2) Other pleurisy ..	1.42	2.00	1.92	1.67	1.58	1.41	1.22	1.06	0.929	1.18	1.32	1.29	1.54
112. Asthma ..	4.73	9.54	8.19	6.76	4.49	3.57	2.77	2.02	2.37	2.68	3.42	4.66	6.45
115-129. Diseases of the digestive system ..	70.9	75.5	72.9	73.5	69.1	67.4	67.1	68.3	70.3	71.0	70.9	70.9	73.6
117. Ulcer of the stomach or duodenum ..	11.5	14.0	12.7	12.3	11.6	10.8	10.5	10.7	10.4	9.63	10.6	11.3	13.5
117 (a) Ulcer of the stomach ..	7.89	9.64	8.52	8.26	7.89	7.14	7.23	7.13	7.36	6.80	7.48	7.81	9.35
117 (b) Ulcer of the duodenum ..	3.62	4.37	4.13	4.06	3.75	3.63	3.29	3.58	3.05	2.83	3.16	3.48	4.17
118 (1) Inflammation of the stomach ..	2.47	2.74	2.67	2.87	2.65	2.36	2.42	2.29	2.33	2.10	1.97	2.50	2.75
119 & 120. Diarrhoea and enteritis ..	14.2	13.8	13.1	13.5	12.4	12.3	12.2	13.5	16.5	19.2	16.8	13.9	13.7
121. Appendicitis ..	8.16	8.60	8.00	8.27	8.18	8.00	8.10	8.46	7.68	7.99	8.21	8.55	7.83
122 (a) Hernia ..	5.71	6.74	6.75	6.15	5.59	5.33	5.23	5.29	4.92	4.77	5.25	5.93	6.62
122 (b) Intestinal obstruction ..	7.41	7.65	7.47	7.46	7.67	7.12	7.16	7.51	7.40	7.18	7.12	7.56	7.68
124. Cirrhosis of the liver ..	3.83	4.25	4.38	4.26	3.75	3.43	3.72	3.52	4.17	3.57	3.59	3.48	3.80
125 (1) Acute yellow atrophy ..	0.221	0.161	0.142	0.226	0.240	0.239	0.253	0.219	0.181	0.260	0.258	0.213	0.252
126. Biliary calculi ..	3.40	3.34	3.44	3.49	3.31	3.46	3.35	3.37	3.29	3.14	3.57	3.55	3.43
130. Acute nephritis ..	2.88	3.49	3.43	3.17	3.39	2.75	2.86	2.26	2.39	2.43	2.46	2.91	3.10
131. Chronic nephritis ..	35.9	41.9	40.4	41.0	37.4	35.2	33.9	30.5	30.5	30.8	32.9	36.4	39.9
133 (a) Pyelitis ..	2.04	2.08	2.07	1.97	2.11	2.02	1.89	2.01	2.15	2.03	1.99	2.13	1.99
135 (a). Cystitis ..	2.19	2.57	2.28	2.44	2.27	2.02	1.73	2.15	2.10	1.92	2.05	2.36	2.35
137. Diseases of the prostate ..	12.2	13.9	13.6	12.5	11.5	11.7	11.5	10.6	11.5	11.4	2.3	12.9	12.6
140-150. Pregnancy and child-bearing ..	7.12	7.56	7.82	7.54	7.83	7.10	6.99	6.30	7.10	6.61	16.59	6.78	7.32
140-141. Abortion, septic and other ..	1.01	1.01	0.972	1.08	1.13	0.923	0.913	0.910	1.13	0.980	1.03	1.11	0.994
140 & 145. Puerperal sepsis ..	3.12	3.68	3.67	3.86	3.65	3.34	3.03	2.58	2.77	2.53	2.63	2.83	2.94
144. Puerperal hemorrhage ..	0.748	0.774	0.816	0.671	0.893	0.729	0.793	0.639	0.729	0.820	0.716	0.687	0.716
146. Puerperal albuminuria ..	1.03	0.923	1.04	0.981	1.09	0.968	1.14	0.994	1.18	1.12	0.890	0.973	1.06
147. Other toxæmias of pregnancy ..	0.376	0.381	0.411	0.303	0.433	0.297	0.347	0.361	0.426	0.467	0.361	0.360	0.368
148. Phlegmasia alba dolens, etc. ..	0.485	0.561	0.610	0.490	0.533	0.477	0.527	0.381	0.387	0.420	0.465	0.480	0.497
149. Other accidents of childbirth ..	0.821	0.774	0.809	0.729	0.827	0.832	0.773	0.813	0.981	0.793	0.794	0.767	0.961
151. Carbuncle, boil ..	1.55	1.68	1.64	1.43	1.56	1.54	1.51	1.47	1.50	1.67	1.52	1.47	1.64
152 (1) Cellulitis ..	1.68	2.05	2.09	2.09	2.13	1.70	1.53	1.24	1.35	1.22	1.21	1.62	1.97
152 (2) Acute abscess ..	0.463	0.471	0.532	0.445	0.520	0.432	0.367	0.465	0.419	0.400	0.445	0.520	0.548
154. Infective osteomyelitis ..	1.29	1.33	1.36	1.24	1.37	1.45	1.23	1.19	1.35	1.29	1.29	1.09	1.28
158. Congenital debility ..	4.81	6.25	6.56	6.34	5.63	4.75	3.93	3.70	3.57	3.67	4.09	4.40	4.95
159. Premature birth ..	29.8	36.4	35.5	34.9	32.3	29.3	27.0	25.0	24.8	25.0	26.4	28.9	32.6
160. Injury at birth ..	3.74	3.81	3.87	4.14	4.09	3.90	3.81	3.62	3.56	3.79	3.46	3.35	3.53
161 (a) Atelectasis ..	2.95	3.21	3.36	3.09	3.20	3.08	2.89	2.66	2.82	2.71	2.59	2.71	3.15
161 (b) Icterus neonatorum ..	0.854	0.819	0.887	1.00	1.13	0.961	0.913	0.742	0.877	0.733	0.729	0.667	0.794
162. Old age { P. 47.4 62.6 64.8 60.6 50.7 43.7 39.4 36.6 36.0 36.3 39.4 45.2 53.9 M. 18.7 25.0 25.2 24.1 20.2 17.5 15.2 14.4 13.7 14.3 15.9 18.2 21.5 F. 28.6 37.6 39.6 36.5 30.5 26.2 24.2 22.2 22.3 22.0 23.5 27.0 32.3													
163-171. Suicide (all forms) { P. 15.0 14.9 14.9 15.2 16.5 16.2 16.6 15.8 14.4 13.8 13.6 13.9 14.0 M. 10.4 10.5 10.2 10.5 11.6 11.4 11.4 11.0 10.1 9.59 9.20 9.41 9.55 F. 4.59 4.44 4.66 4.65 4.86 4.81 5.17 4.80 4.25 4.17 4.39 4.49 4.45													
166. Suicide by drowning ..	2.39	2.55	2.35	2.68	2.54	2.77	2.74	2.48	2.20	2.11	2.05	2.05	2.10
178. Accidental absorption of poisonous gas ..	0.504	0.710	0.560	0.632	0.413	0.426	0.293	0.277	0.316	0.487	0.452	0.753	0.735
181. Accidental burns { P. 3.58 4.94 5.15 4.70 3.57 2.89 2.61 2.25 2.54 2.47 2.94 3.95 5.10 (conflagration { M. 1.49 1.87 1.82 1.69 1.43 1.32 1.24 1.08 1.25 1.15 1.37 1.82 1.82 excepted) { F. 2.10 3.07 3.33 3.01 2.15 1.57 1.37 1.16 1.28 1.33 1.57 2.13 3.28													
183. Accidental drowning ..	2.11	1.01	0.759	1.10	1.53	2.12	3.62	5.08	5.08	2.10	1.01	0.747	1.06
186. Accidental injury by fall, crushing, etc. ..	31.9	33.0	30.7	30.2	29.4	29.7	30.6	31.3	33.4	33.0	32.3	33.5	35.6
194 (1) Inattention at birth ..	0.505	0.606	0.638	0.594	0.600	0.684	0.473	0.400	0.445	0.387	0.355	0.393	0.490

between 1921-25 and 1931-35 in the monthly standardized rates so obtained were as follows :—

	Respiratory tuberculosis			Influenza			All other causes		
	Annual S.D.R. per 100,000 1931-35.	Per cent. change from 1921-25 to 1926-30 to 1931-35.		Annual S.D.R. per 100,000 1931-35.	Per cent. change from 1921-25 to 1926-30 to 1931-35.		Annual S.D.R. per 100,000 1931-35.	Per cent. change from 1921-25 to 1926-30 to 1931-35.	
January	75·4	—10	— 7	80·4	—44	+87	1,093	— 2	— 4
February	76·1	— 8	—15	77·6	+28	—33	1,096	+ 4	—12
March	74·1	— 4	—15	45·8	+29	—51	1,040	— 2	— 9
April	69·0	—13	—14	24·4	—25	—26	922	—10	— 5
May	62·5	—13	—15	11·3	—25	—34	827	—16	— 6
June	57·9	—12	—15	6·0	—24	—31	770	— 5	— 2
July	52·7	—12	—16	3·1	—12	—39	716	— 6	— 4
August	49·2	—14	—16	2·7	— 5	—36	702	— 6	— 4
September	50·7	—12	—14	3·7	—19	—20	716	— 8	— 3
October	54·4	— 8	—16	6·7	+22	—37	765	— 2	— 7
November	59·8	—18	—11	10·9	—12	—16	855	—11	— 4
December	63·0	—11	—15	19·5	—43	+23	977	—10	— 3
Year as a whole ..	62·0	—12	—14	24·1	— 6	—19	873	— 5	— 6

Respiratory tuberculosis mortality, which is $1\frac{1}{2}$ times as great in the winter months as the summer, declined during the whole decade by a proportionately smaller amount in the March quarter than in the remainder of the year. Mortality attributed to influenza fluctuates a good deal in the winter months even when 5-year averages are compared and the January and February rates have not improved greatly, but between April and September they have declined considerably in each quinquennial interval. This may indicate a clearer differentiation between deaths from the true epidemic influenza and deaths from respiratory disease of unknown origin occurring when influenza is not epidemic but which have often in the past been attributed to it as a convenient term. Standardized mortality from all other causes in combination fell by 5 per cent. in the first interval and 6 per cent. in the second, and the months which showed the greatest degree of improvement on this basis were May, April and November, whilst those with least relative improvement were January, February and June.

Typhoid fever showed, as in 1926-30, a November maximum for deaths and a September maximum for notifications. Measles again gave a March maximum, and it is noteworthy that whereas the annual deaths declined in comparison with 1921-25 by 41 per cent. the deaths for each month from July to December declined by 50 or even 60 per cent. Whooping cough mortality was maximal in February, as in the previous quinquennial periods, and the proportionate decline since 1921-25 was almost the same in amount in each season of the year.

Diphtheria notifications were maximal in January and mortality in December. Dysentery deaths were most frequent in the March quarter. Scarlet fever and erysipelas notifications were most frequent in November but mortality was greatest in January and

March respectively. Acute poliomyelitis notifications and deaths reached their peak in September, and this was also true of tetanus deaths. Of the septic infections, carbuncle and boil reached their maxima in January, septicæmia in November, puerperal sepsis and ear diseases in March, cellulitis in April and osteomyelitis in May, with minima ranging from June to November (March for carbuncle and boil). Rheumatic diseases produced most deaths in February and least in September and diabetes mortality was greatest from December to February.

Heart diseases, pneumonia, bronchitis and digestive diseases showed the following percentage rates of change in the daily deaths between 1921-25 and 1931-35.

	Heart Disease	Pneumonia	Bronchitis	Digestive Diseases
Whole year	+81	-20	-45	- 8
January	+99	- 5	-30	+ 1
February	+95	-10	-35	+ 1
March	+89	-17	-44	+ 6
April	+78	-28	-51	- 0
May	+80	-29	-53	+ 2
June	+83	-22	-47	+ 4
July	+76	-28	-50	- 8
August	+71	-21	-48	-28
September	+74	-20	-48	-27
October	+79	-19	-46	-18
November	+70	-28	-55	- 7
December	+78	-25	-51	- 4

For heart diseases the increase has been most pronounced in the March quarter and particularly in January. For pneumonia the relative improvement has been most pronounced in the spring months and in November and December and least in January and February. Bronchitis mortality also improved to a much slighter extent in January and February than during the rest of the year. For diseases of the digestive system, whereas the March and June quarters showed slight increases comparable with the increase in population, each of the last six months of the year showed a decline in the daily average of deaths, this being very considerable in August, September and October. This is accounted for by the great decline in diarrhœa and enteritis deaths which averaged about 49 per day in August and September and 37 in October during 1921-25 but only 16 to 19 per day in those months during 1931-35.

Cystitis and pyelitis deaths exhibit no important seasonal variation, but mortality from diseases of the prostate was highest in the winter and autumn months. Maternal mortality was slightly higher from December to April than during the rest of the year, this

being chiefly due to puerperal sepsis. The toxæmias of pregnancy showed no pronounced seasonal variation. Suicide was most frequent in the spring and least frequent in the autumn months, April being the maximal month for males and June for females. Deaths from accidental burns were most frequent from December to February and for deaths by fall, crushing, etc., which consist mainly of traffic deaths, the worst month was December and the best April.

Mortality of Single and Married Women in Different Parts of the Country.

In the Review for 1933, Table XXXII, mean annual death rates in 1930-32 at individual and quinquennial ages over 15 were given for single, married and widowed or divorced women in England and Wales. No such comparison has yet been made for separate regions or between urban and rural areas and it is important to ascertain to what extent industrial conditions affect the relation between single and married women's mortalities. Separate rates for single and married women in Greater London and in regional aggregates of county boroughs, urban districts and rural districts have, therefore, now been calculated for 1930-32, and are shown in Table XCV with comparable rates in England and Wales as a whole. At the age period 16-20 the numbers of deaths of married women in the separate areas were small, and reliable comparisons of their rates with those of single women at this age period cannot be made, but at the other age periods shown in the Table the numbers of deaths exceeded 100 in most instances, the exceptions being shown in italics.

Single women's mortality in England and Wales was in excess of that of married women at ages between 25 and 65 and over 75, and married women's mortality was in excess at ages under 25 and at 65-75. This was true also of Greater London, and the South Eastern county boroughs and small towns where the amount of disparity between the rates was very similar to that in the country as a whole. In the South Eastern rural districts single women's rates were in excess also in the age-group 20-25. In the North married women's rates were in excess at 25-35 in the county boroughs of North I, II and IV, but this was not true of North III, where industrial employment of young married women is also considerable. The county boroughs of North I also showed higher rates for married women at ages 45-55, and higher rates for single women at 70-75, those of North II showed a large excess for single women at 65-75, and those of North IV at 70-75. The small towns and rural districts of the North shared with the county boroughs a larger excess of married women's mortality at 20-25 than in the country as a whole, but showed no other unusual features.

In the Midland Region the county boroughs of Midland II showed an excess for married women at 55–70, but not at 70–75, and the small towns showed a similar excess at 55–65. In the small towns and rural districts of the Midlands and East married women's

Table XCV.—Annual Death Rates of Single and Married Females at various Ages during 1930–32 in Greater London and Regional Aggregates of County Boroughs, Urban and Rural Districts.

			Mean Annual Death Rate per 100,000 living at ages							
			16–	20–	25–	35–	45–	55–	65–	75 and over
<i>Greater London</i>	..	{ Single	205	248	291	424	771	1,582	2,831	4,752
		{ Married	(247)	255	269	368	707	1,504	3,058	4,998
<i>County Boroughs.</i>										
South East (outside	{ Single	177	253	303	413	784	1,517	2,792	4,133	11,251
Greater London) ..	{ Married	(559)	254	278	381	690	1,433	2,913	4,317	9,633
North I ..	{ Single	359	381	396	586	821	2,051	3,695	6,181	13,819
	{ Married	(644)	418	437	552	883	1,855	3,710	5,666	10,499
North II ..	{ Single	296	315	358	523	1,055	2,048	4,607	6,884	12,797
	{ Married	(552)	430	364	526	910	1,815	3,440	6,185	10,682
North III ..	{ Single	250	253	321	522	1,016	1,869	3,738	6,131	13,619
	{ Married	(429)	337	316	462	830	1,801	3,803	6,116	10,919
North IV ..	{ Single	283	323	368	513	997	1,978	3,778	6,598	13,856
	{ Married	(438)	380	378	493	899	1,983	3,947	6,148	10,837
Midland I..	{ Single	233	263	332	515	912	1,803	3,295	5,313	12,184
	{ Married	(399)	265	302	454	813	1,671	3,306	5,377	9,837
Midland II	{ Single	255	250	333	473	943	1,662	2,901	5,316	12,801
	{ Married	(241)	323	325	428	799	1,798	3,421	5,104	9,490
East ..	{ Single	197	266	340	507	958	1,677	3,041	5,062	13,109
	{ Married	(418)	(322)	305	409	738	1,687	3,328	5,207	10,420
South-West	{ Single	285	259	349	585	706	1,428	2,522	4,566	12,470
	{ Married	(489)	(340)	305	467	854	1,515	3,058	4,666	10,190
Wales I ..	{ Single	321	356	419	542	957	2,252	4,148	6,447	13,973
	{ Married	(313)	423	376	499	939	1,795	3,443	5,435	10,171
<i>Urban Districts.</i>										
South East (outside	{ Single	170	229	300	411	763	1,476	2,704	4,175	11,409
Greater London) ..	{ Married	(362)	238	260	356	644	1,389	2,741	4,634	9,331
North ..	{ Single	266	275	331	492	951	1,935	3,628	6,080	13,380
	{ Married	(460)	333	336	463	831	1,850	3,814	6,403	11,239
Midland ..	{ Single	238	283	358	527	814	1,635	3,102	5,346	12,522
	{ Married	(329)	262	316	422	726	1,719	3,304	5,552	9,975
East ..	{ Single	195	215	323	480	843	1,548	2,898	5,311	13,003
	{ Married	(198)	(186)	264	389	673	1,468	2,867	4,749	9,303
South West	{ Single	200	243	316	426	844	1,687	2,719	4,347	11,428
	{ Married	(478)	227	292	374	698	1,451	2,774	4,235	9,326
Wales ..	{ Single	341	412	467	592	1,032	2,053	3,756	5,731	13,935
	{ Married	(494)	452	422	531	935	1,907	3,648	6,147	10,437
<i>Rural Districts.</i>										
South East (outside	{ Single	182	230	292	407	768	1,439	2,430	4,166	10,834
Greater London) ..	{ Married	(202)	184	257	329	640	1,349	2,708	4,503	9,434
North ..	{ Single	238	259	325	485	866	1,775	3,176	5,310	13,176
	{ Married	(360)	341	319	475	734	1,688	3,379	5,636	10,721
Midland ..	{ Single	219	279	351	519	774	1,602	2,939	4,778	11,499
	{ Married	(446)	251	275	418	695	1,483	2,989	4,799	9,498
East ..	{ Single	239	272	403	528	942	1,578	2,969	4,030	12,327
	{ Married	(222)	240	293	369	681	1,458	2,600	4,429	9,654
South West	{ Single	182	279	399	467	835	1,557	3,037	4,830	11,483
	{ Married	(238)	305	283	386	688	1,484	2,870	4,669	9,417
Wales ..	{ Single	289	430	472	602	1,156	2,026	4,030	6,090	14,968
	{ Married	(647)	367	393	498	837	1,720	3,594	5,801	12,006
ENGLAND AND WALES	{ Single	236	274	333	476	863	1,698	3,100	5,070	12,281
	{ Married	379	298	311	426	766	1,643	3,246	5,241	9,920

Note.—Rates based on less than 50 deaths are shown in italics and parentheses. Rates based on less than 100 deaths are shown in italics.

mortality at 20–25 was below that of single women. The Eastern county boroughs showed no unusual features, but the urban and rural districts were characterised by very large disparities between

single and married women's rates at ages from 25 to 55, and excesses for single women also at 65-75 in the urban districts and at 65-70 in the rural districts.

In the South West married women's rates were in excess of those of single women in the county boroughs at all ages between 45 and 75, but this was not the case in the urban and rural districts. The county boroughs of Wales I showed higher mortality amongst single than married women at all ages from 25 upwards and the Welsh rural districts showed a similar excess at all ages over 20.

Standardized Mortality of Rural Parts of Counties in 1931-34 and 1936 compared with 1911-14.

In Tables XCVII and XCVIII of the Review for 1934 the standardized mortality of each county borough and each administrative county in the two periods 1911-14 and 1931-34 was compared. The administrative counties contain, however, a varying content of urban districts, ranging from 20 per cent. in Norfolk to 100 per cent. in Middlesex, and a better picture of the trend of mortality in rural areas is obtained by comparing the standardized mortality ratios and the percentage decline in the standardized death rates for the county aggregates of rural districts. This has been done for each county in Table XCVI where column (2) gives the mean standardized death rate in 1911-14, column (3) the similar rate in 1931-34 and column (4) the S.D.R. in 1936. All the standardized rates have been corrected by applying the time comparability factors. The next three columns give the standardized percentage ratios (adjusted percentage of national rate) in 1911-14, 1931-34 and 1936, and column (8) gives the percentage fall in S.D.R. between 1911-14 and 1936.

In 1911-14 the highest rural standardized mortality ratios were in the counties of Durham (110), Caernarvon (101), Cardigan, Carmarthen and Merioneth (99), West Riding of Yorkshire (98) and Denbigh (97), and the lowest ratios were in the Isle of Wight (67), East Sussex and Surrey (69), West Sussex and Hertford (72). In 1931-34 the highest rural mortality ratios were given by the counties of Carmarthen (112), Durham (111), Caernarvon (110), Denbigh, Glamorgan and Pembroke (107), Cardigan (105), and Merioneth (104), and the lowest by Surrey, Hertford, and the Isle of Wight (79), and Cambridge, Essex, Norfolk, Southampton, and Sussex East (80). In 1936 Carmarthenshire gave the highest ratio of 119, followed by Caernarvonshire (117), Denbighshire (114) and Durham (111).

The standardized death rate of England and Wales declined by 28 per cent. from an average rate of 13·5 per thousand in 1911-14, to an average of 9·7 in 1931-34, and for 1936 the decline was by 32 per cent. to a rate of 9·2. A higher figure in column (6) than in column (5) indicates that the rural mortality of the county in question

Table XCVI.—Standardized Mortality in 1931-34 and 1936 compared with 1911-14, and Housing Density, in each County Aggregate of Rural Districts.

County Aggregates of Rural Districts.	Persons per room 1931.	Mean S.D.R. in 1911-14.*	Mean S.D.R. in 1931-34	S.D.R. in 1936.	Standardised mortality ratio (adjusted per cent. of National rate).			Percent. decline in S.D.R. 1911-14 to 1936.
					1911-14.	1931-34.	1936.	
	1.	2.	3.	4.	5.	6.	7.	8.
Bedfordshire	·72	10·5	8·2	7·6	78	85	82	28
Berkshire	·70	9·9	7·9	7·0	73	81	76	29
Buckinghamshire	·69	10·3	8·1	7·9	76	84	86	23
Cambridgeshire	·69	10·4	7·8	7·6	77	80	82	27
Cheshire	·74	11·1	8·5	8·5	82	88	93	23
Cornwall	·66	11·7	8·8	8·3	87	91	90	29
Cumberland	·78	11·9	9·8	8·8	88	101	96	26
Derbyshire	·83	12·2	9·3	8·9	90	96	97	27
Devonshire	·68	10·7	8·4	7·8	79	87	85	27
Dorsetshire	·70	10·1	8·2	7·8	75	85	85	23
Durham	1·16	14·9	10·8	10·2	110	111	111	32
Ely, Isle of	·74	10·3	8·4	8·6	76	87	93	16
Essex	·73	10·1	7·8	7·9	75	80	86	22
Gloucestershire	·73	10·9	8·5	8·5	81	88	93	22
Herefordshire	·71	11·0	8·6	8·0	81	89	87	27
Hertfordshire	·71	9·7	7·7	7·0	72	79	76	28
Huntingdonshire	·67	10·2	8·2	8·2	76	85	89	20
Kent	·72	10·1	7·9	7·7	75	81	84	24
Lancashire	·78	12·1	9·2	8·4	90	95	92	31
Leicestershire	·74	10·9	8·5	8·1	81	88	88	26
Lincolnshire, Holland	·77	10·5	7·9	7·2	78	81	78	31
" Kesteven	·73	10·7	8·2	7·0	79	85	76	35
" Lindsey	·72	10·4	8·3	7·8	77	86	85	25
Norfolk	·69	10·2	7·8	7·2	76	80	78	29
Northamptonshire	·71	10·8	8·1	8·0	80	83	87	26
Northumberland	·94	11·8	9·1	9·2	87	94	100	22
Nottinghamshire	·79	11·0	8·8	8·6	81	91	93	22
Oxfordshire	·71	10·3	8·1	7·8	76	83	85	24
Peterborough, Soke of	·73	10·5	9·2	6·7	78	95	72	36
Rutland	·68	10·7	8·2	8·5	79	85	93	21
Shropshire	·79	10·7	8·9	8·4	79	92	92	22
Somersetshire	·69	10·6	8·4	8·1	79	87	88	24
Southamptonshire	·70	9·9	7·8	7·5	73	80	81	24
Staffordshire	·81	11·4	8·7	8·4	84	90	92	26
Suffolk, East	·71	10·1	7·9	7·8	75	81	85	23
" West	·71	10·5	8·2	7·9	78	85	86	25
Surrey	·68	9·3	7·7	7·8	69	79	85	16
Sussex, East	·67	9·3	7·8	7·3	69	80	80	22
" West	·67	9·7	7·9	7·5	72	81	81	23
Warwickshire	·76	11·1	8·5	8·3	82	88	91	25
Westmorland	·71	10·8	9·3	9·3	80	96	101	14
Wight, Isle of	·63	9·0	7·7	6·5	67	79	71	28
Wiltshire	·74	10·2	8·4	7·5	76	87	82	26
Worcestershire	·72	10·9	8·5	8·0	81	88	87	27
Yorkshire, East Riding	·75	10·5	8·2	7·8	78	85	85	26
" North	·72	11·1	8·6	8·3	82	89	91	25
" West	·86	13·2	9·6	9·2	98	99	100	30
Anglesey	·72	12·0	9·9	9·8	89	102	106	18
Brecknockshire	·79	12·4	9·8	8·8	92	101	96	29
Caernarvonshire	·69	13·6	10·7	10·8	101	110	117	21
Cardiganshire	·69	13·3	10·2	9·8	99	105	107	26
Carmarthenshire	·81	13·3	10·9	11·0	99	112	119	17
Denbighshire	·90	13·1	10·4	10·5	97	107	114	20
Flintshire	·83	12·5	9·8	9·3	93	101	101	26
Glamorganshire	·83	12·6	10·4	9·5	93	107	104	25
Merionethshire	·72	13·4	10·1	9·8	99	104	107	27
Monmouthshire	·78	11·6	8·5	8·4	85	88	91	28
Montgomeryshire	·74	11·3	9·4	8·5	84	97	93	25
Pembrokeshire	·78	12·3	10·4	9·8	91	107	106	20
Radnorshire	·72	10·9	8·3	8·7	81	86	94	20

* Corrected by applying the time comparability factor (T.C.F. ·994), as has been done for 1931-34 and 1936.

did not fall by so large a proportion as the national mortality and this was true of most of the rural areas. For all rural districts of England and Wales the mean S.D.R. in 1911-14 was,

as shown in Table III, 10·9 per thousand, and for all rural districts outside Greater London the S.D.R. in 1931–34 was 8·7, a decline of about 20 per cent., and in 1936 it was 8·3, a decline of about 24 per cent. The exclusion of Greater London districts has little effect on the comparison. Whereas the standardized mortality of rural areas was 81 per cent. of the national rate in 1911–14, it had risen to about 90 per cent. in 1931–34, and remained at 90 per cent. in 1936, and the appropriate figures in columns 5, 6 and 7 would be 81, 90 and 90. The counties whose rural mortality showed least proportionate improvement in the twenty years preceding 1931–34 were Peterborough, Westmorland, Pembroke, Glamorgan, Cumberland, Shropshire, Anglesey, Carmarthen, Montgomery and Isle of Wight, and those whose rural areas showed most proportionate improvement were Durham and the West Riding of Yorkshire whose mortality declined at the same rate as that of England and Wales as a whole. The Lancashire rural districts have recorded a diminishing excess over the mortality for rural areas generally (from 11 per cent. excess in 1911–14 to 6 per cent. in 1931–34 and 2 per cent. in 1936), and this has been true also of Cornwall, Derbyshire, Hereford and Staffordshire.

Mortality Comparison of County Boroughs grouped according to their Industries with that of the surrounding Areas.

In Table XCVII the 51 inland county boroughs of England, excluding those of Greater London, have been arranged according to the industrial grouping of their male populations at the census of 1931. Within each group the towns are placed in descending order of the percentage of males over 14 who were working in mining or manufacturing industries (orders III–XII, XIV, building being excluded). In 7 of the county boroughs this percentage was 50 or more (group 1), and in 4 it was below 25 (group 3) and the intermediate group is subdivided by first separating those with 10 per cent. or more in the textile industry (2a), and dividing the remainder according to the percentages in the industries of mining, bricks or pottery, metals, chemicals, textiles, skins or leather.

The standardized ratio of a town or county aggregate for 1911–14 or 1931–34 is the percentage ratio of the sum of the standardized death rates in the four years to the corresponding figure for England and Wales. The local standardized rates have been, as elsewhere in this Review, corrected for national changes in age distribution of the population since the last census by applying the appropriate time comparability factors before reducing to percentages of the national standardized rate. The excess of each county borough ratio over the corresponding ratio for surrounding county areas has then been obtained by simple subtraction of the resulting S.M.R.'s. Since this correction was not applied in calculating the county borough and administrative county ratios given in Tables XCVII

Table XCVII.—Standardized Mortality in terms of England and Wales and compared with surrounding County Areas of Inland County Boroughs of England grouped according to their Industries, 1911-14 and 1931-34.

	Per cent. of Males over 14 years of age at 1931 Census working in				Persons per room, 1931.	Standardized Mortality ratio England and Wales = 100.		Difference from Administrative County in which town is situated.		Difference from Rural district aggregate of County in which town is situated.		Per cent. fall in Standardized death rate.
	Mining and Manufacturing industries. (1)	Mining, pottery, metals, chemicals or leather. (2)	Textile manufacturing. (3)	Other Manufacturing industries. (4)		1911-14.	1931-34.	1911-14.	1931-34.			
										(6)	(7)		(8)	(9)	(10)	(11)	(12)
Inland County Boroughs of England except Greater London :—												
1. With 50 per cent. or more of all males over 14 at work in mining or manufacturing industries (1)—												
Coventry ..	56.0	48.7	4.0	3.4	.85	96	100	+ 11	+ 11	+ 14	+ 12	25
West Bromwich ..	53.5	47.7	0.2	5.7	1.01	120	111	+ 18	+ 11	+ 36	+ 21	33
St. Helens ..	52.9	50.1	0.2	2.6	1.13	139	124	+ 28	+ 13	+ 49	+ 29	36
Smethwick ..	52.5	44.3	0.1	8.1	.82	107	102	+ 5	+ 2	+ 23	+ 12	31
Stoke-on-Trent ..	50.7	46.0	0.1	4.6	1.04	142	126	+ 40	+ 26	+ 58	+ 36	36
Rotherham ..	50.5	47.5	0.0	2.9	.91	121	108	+ 15	+ 1	+ 23	+ 9	36
Warrington ..	50.3	42.6	0.8	6.8	.98	126	124	+ 15	+ 13	+ 36	+ 29	29
Average of group ..	—	—	—	—	.96	121	113	+ 19	+ 11	+ 34	+ 21	33
2. With 25 but less than 50 per cent. of all males over 14 at work in mining or manufacturing industries (1)—												
(a) Including 10 per cent. or more in textile industry—												
Rochdale ..	47.0	14.3	27.0	5.7	.85	122	128	+ 11	+ 17	+ 32	+ 33	25
Huddersfield ..	46.1	18.9	20.3	6.9	.91	113	118	+ 7	+ 11	+ 15	+ 19	25
Oldham ..	45.5	18.2	23.3	4.0	.89	138	134	+ 27	+ 23	+ 48	+ 39	30
Bolton ..	45.2	15.2	24.5	5.6	.85	121	119	+ 10	+ 8	+ 31	+ 24	30
Halifax ..	44.2	19.3	17.0	8.0	.90	115	120	+ 9	+ 13	+ 17	+ 21	25
Bury ..	43.5	10.8	19.9	12.8	.84	122	118	+ 11	+ 7	+ 32	+ 23	31
Dewsbury ..	43.4	17.2	21.6	4.7	1.02	129	124	+ 23	+ 17	+ 31	+ 25	31
Burnley ..	43.1	14.7	22.3	6.0	.85	136	125	+ 25	+ 14	+ 46	+ 30	34
Bradford ..	37.8	8.6	22.8	6.3	.88	118	116	+ 12	+ 9	+ 20	+ 17	29
Stockport ..	37.5	12.4	12.4	12.7	.82	120	113	+ 23	+ 16	+ 38	+ 25	32
Blackburn ..	32.9	10.8	13.7	8.4	.82	123	116	+ 12	+ 5	+ 33	+ 21	32
Preston ..	31.9	10.9	10.9	10.0	.85	130	125	+ 19	+ 14	+ 40	+ 30	31
Average of group ..	—	—	—	—	.87	124	122	+ 16	+ 13	+ 32	+ 26	29

(b) Including 30 per cent. or more in mining, pottery, metals, chemicals, leather or textiles*—													
Dudley ..	47.3	40.5	0.2	6.6	1.00	119	32	23	38	28	29		
Barnsley ..	46.3	42.1	0.3	3.9	.91	133	27	14	35	22	35		
Birmingham ..	44.0	33.7	0.2	10.2	.83	117	32	14	35	15	37		
Sheffield ..	43.9	38.6	0.1	5.3	.87	121	15	1	23	9	36		
Walsall ..	43.0	36.8	0.2	6.1	.91	121	19	6	37	16	37		
Wolverhampton ..	42.5	33.5	2.0	6.9	.87	114	12	3	30	13	35		
Wigan ..	40.7	32.3	3.3	5.0	1.00	134	35	23	56	39	34		
Doncaster ..	39.0	33.1	1.4	4.6	.75	96	11	10	19	3	41		
Derby ..	38.8	28.1	5.0	5.6	.75	99	2	1	6	3	26		
Wakefield ..	37.7	27.3	5.0	5.4	.91	113	7	6	15	14	28		
Darlington ..	36.5	30.2	0.5	5.8	.91	101	12	13	7	10	29		
Lincoln ..	35.8	29.9	0.1	5.8	.74	99	12	10	18	13	25		
Average of group ..					.87	116	15	7	25	13	32		
(c) Including 15 but less than 30 per cent. in mining, pottery, metals, chemicals, leather or textiles—													
Leicester ..	44.5	11.5	9.9	23.1	.69	103	18	14	22	15	28		
Nottingham ..	37.6	17.3	8.9	11.4	.78	113	23	14	32	19	30		
Leeds ..	36.9	17.4	3.3	16.2	.87	119	14	12	22	20	29		
Salford ..	36.8	17.9	6.5	12.5	.94	135	24	24	45	40	28		
Manchester ..	32.5	15.2	4.8	12.5	.87	126	21	15	42	31	31		
Ipswich ..	30.9	17.5	0.3	13.1	.69	96	17	7	21	9	33		
Worcester ..	30.9	18.3	0.4	12.3	.77	98	11	9	17	14	25		
Oxford ..	27.9	18.3	0.1	9.5	.72	84	6	3	8	2	27		
Average of group ..					.79	110	17	12	26	19	29		
(d) Including less than 15 per cent. in mining, pottery, metals, chemicals, leather or textiles—													
Burton-on-Trent ..	43.0	8.3	0.3	34.4	.76	97	5	1	13	9	27		
Northampton ..	42.7	8.5	0.1	34.2	.70	97	15	7	17	8	32		
Norwich ..	35.1	8.8	0.6	25.8	.71	94	16	12	18	13	29		
Bristol ..	29.5	12.3	0.2	17.0	.81	99	15	5	18	6	32		
Gloucester ..	28.2	12.5	0.2	15.6	.75	101	13	12	16	13	25		
Reading ..	28.2	10.1	0.1	18.0	.75	83	6	10	10	12	20		
York ..	26.1	10.1	0.1	15.9	.84	98	17†	12†	20	15	26		
Carlisle ..	25.0	7.4	6.4	11.3	.95	121	20	5	33	10	34		
Average of group ..					.78	99	12	8	18	11	29		
3. With less than 25 per cent. of all males over 14 at work in mining or manufacturing industries (1)—													
Chester ..	23.9	16.0	0.1	7.8	.85	110	13	17	28	26	25		
Bath. ..	21.9	9.5	0.4	12.0	.69	83	1	1	4	1	25		
Exeter ..	19.3	8.9	0.1	10.3	.73	99	15	4	20	4	34		
Canterbury ..	19.1	11.6	0.3	7.3	.72	85	2	3	10	7	25		
Average of group ..					.75	94	8	6	16	10	28		

Notes.—(1) Industry orders III–XII, XIV, excluding the building industry (XIII). (2) Industry orders III–VI, VIII. (3) Industry order VII. (4) Industry orders IX–XII, XIV (Clothing, Food, Tobacco, Paper and other manufacture).
 * Excluding towns in the textile group above.
 † Difference from Yorkshire, East Riding.
 Men out of work at the census are excluded from the industry totals but included in the totals of all males over 14 on which the percentages are based.

and XCVIII of the Review for 1934, the figures in Columns (6) to (9) and (12) of Table XCVII differ slightly from those given in the 1934 tables. For the county aggregates of rural districts the necessary ratios are given in Table XCVI of this Review. The difference

Table XCVIII.—Mortality Comparison of London and County Boroughs in 1911-14 and 1931-34, and excess over Surrounding Areas, with Industrial Grouping of Inland Towns.

	Standardized mortality ratios in terms of England and Wales taken as 100.		Excess over S.M.R. of Administrative Counties in which towns are situated.		Excess over S.M.R. of the Rural District aggregates of Counties in which towns are situated.		Per cent. fall in S.D.R. from 1911-14 to	Persons per room at 1931 Census.
	1911-14.	1931-34.	1911-14.	1931-34.	1911-14.	1931-34.	1931-34.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
London Administrative County	107	104	30	21	34	24	30	·98
County boroughs in outer ring	93	99	15	17	20	20	24	·94
Tyneside and Durham coast towns	126	123	16	12	24	17	30	1·14
South Wales towns	113	116	9	2	22	14	26	·88
Seaside resorts*	86	94	—1	3	10	10	22	·70
Ports and coastal towns not included above†	115	112	23	18	34	24	30	·86
INLAND COUNTY BOROUGHST of England (outside Greater London)—								
(1) With 50 per cent. or more of all males over 14 at work in mining or manufacturing industries	121	113	19	11	34	21	33	·96
(2) With 25 but under 50 per cent. of males over 14 at work in mining or manufacturing industries								
(a) including 10 per cent. or more in textile industry ..	124	122	16	13	32	26	29	·87
(b) Including 30 per cent. or more in mining, pottery, metal, chemical, leather or textile industries	116	109	15	7	25	13	32	·87
(c) Including 15 but less than 30 per cent. in mining, pottery, metal, chemical, leather or textiles ..	110	109	17	12	26	19	29	·79
(d) Including less than 15 per cent. in mining, pottery, metal, chemical, leather or textiles	99	98	12	8	18	11	29	·78
(3) With less than 25 per cent. of all males at work in mining or manufacturing industries ..	94	95	8	6	16	10	28	·75

* Blackpool, Southport, Bournemouth, Brighton, Eastbourne, Hastings, Southend-on-Sea.

† Barrow-in-Furness, Bootle, Liverpool, Birkenhead, Wallasey, Middlesbrough, Kingston-on-Hull, Grimsby, Great Yarmouth, Portsmouth, Southampton, Plymouth.

‡ See Table XCVII for details.

between the county borough ratio and that of the administrative county in which it is situated indicates the excess for that town (expressed in terms of the England and Wales ratio taken as 100) over the aggregate mortality of the neighbouring urban and rural districts which lie outside the boundaries of the county boroughs.

It is to some extent dependent upon the degree to which industries have extended into the surrounding county and the consequent proportion of the county population living in urban conditions. The difference between the county borough ratio and that of the aggregate of rural districts for the county in which it is situated is not so influenced and affords a measure of the mortality excess at the centre of the industrial area over that of the surrounding areas which have not, save in a few counties such as Durham, become urbanised to any considerable degree. This is, perhaps, a better index than the other of the effect of the industrial conditions corrected for the climatic effects of geographical position. In the case of London the comparisons have been made with the average ratios for Middlesex, Hertford, Surrey and Essex.

Table XCVIII gives the unweighted averages of the standardized mortality figures and differences for the towns comprising each of these groups, and also for the remaining 32 county boroughs, grouped into those of London's outer ring, Tyneside and Durham coast towns, South Wales towns, seaside resorts and other ports or coastal towns.

Mortality was the highest in each period for the Tyneside and Durham towns, the textile group following next, whilst at the lower end of the scale are the seaside towns, the inland towns with the smallest proportions of their populations engaged in manufacture and the towns of London's outer ring.

In 1911-14 the mortality excess over the neighbouring rural areas, expressed as a percentage of the national rate, was 34 in London and in the ports (other than Tyneside, Durham and South Wales) and towns with more than half of their males engaged in mining or manufacture, and 32 in the group of textile towns, but in 1931-34 this excess was reduced to about 24 in the same groups. In the Tyneside, Durham and South Wales towns the excess was 24 in 1911-14 and 17 in 1931-34, and for the seaside resorts it amounted to only 10 in each period. For the groups of inland towns with a quarter to half of their male population employed in mining or manufacture, other than the textile group, the excess ranged in 1931-34 from 11 to 19, whilst towns with less than a quarter of their males employed in mining or manufacture had an excess no greater than the seaside towns. The effects of the older and heavier industries upon the health of the towns which grew up around them, though less than in 1911-14 are, therefore, still apparent. The textile group (2a) contains only two towns with an excess in S.M.R. of less than 20 and Leicester and Nottingham which might also be included with them show a similar excess. Amongst the other towns with high proportions engaged in heavy manufacture, Doncaster, Derby, Darlington, Sheffield and Rotherham have particularly favourable records, whereas, on the other hand, Chester, with a low proportion has an unfavourable mortality.

Column (7) of Table XCVIII shows that the percentage decline in standardized mortality in the 20 year interval amounted to between 28 and 33 per cent. for each group except South Wales (26), London's outer ring towns (24), and the seaside resorts (22 per cent.).

Medical Certification.

Information bearing upon the extent to which death registration and burial take place on the strength of the certificate of a medical attendant who has actually seen the body after death has appeared under the above title in each text portion of the Statistical Review since 1928 inclusive. For a full statement of the aspects of certification affecting this matter, reference should be made to the 1928 Review when the records were examined in some detail, or to the quinquennial repetition of the full enquiry made in 1933. According to present intention the next complete analysis will fall due in 1938, the intermediate years' records being limited to a simple summary of the cases in which the body was or was not seen after death without reference to date or place of death or to the time which had elapsed since the deceased was last seen by a medical attendant.

The appropriate summary of the deaths registered in 1936 is shown in the following table:—

Summary of Certification of Deaths registered during the Year 1936.

—	Registered Medical Practitioner.	Inquest or Coroner's P.M. without Inquest.	Other Cases reviewed by Coroner.	Total Deaths Registered.	
				Number.	Percentage.
(1)	(2)	(3)	(4)	(5)	(6)
Seen after death . .	231,326	42,724	5,097	279,147	56·3
Not seen after death	216,617	—	—	216,617	43·7
	447,943	42,724	5,097	495,764	100·0

NOTE—(1) All deaths subject to inquest or post-mortem by coroner are shown in column 3; of all other deaths, those certified by a registered medical practitioner are shown in column 2 (whether they were referred to a coroner or not), and those not certified by a registered medical practitioner (which are automatically referred to a coroner) are shown in column 4.

(2) Cases in which no statement was forthcoming as to whether they were or were not seen after death have been included with the "not sees" if they were not referred to a coroner. They amounted to 1·6 per 1,000 of the total deaths registered in 1936.

The above statement shows that in 1936 the proportion of "seen" cases was 56·3 per cent. of the total deaths registered, the position in this respect having improved more or less steadily and continuously from the figure of 51·0 per cent. recorded in 1928.

Of the apparently large numbers returned as "not seen," the vast majority of the deceased persons were, of course, seen alive by the medical attendant on the day of death or within a very short period before death. From the full examination made in 1933 it was shown that if the numbers seen within one day of death were added to those seen after death, as conforming to a standard which satisfies reasonable requirements, they would embrace 93·1 per cent. of the total deaths, while if those seen within two days of death were added the proportion would be increased to 96·6 per cent., both percentages showing an advance over the corresponding 1928 figures.

POPULATION.

The total population of England and Wales as at the 30th June, 1936, has been estimated at 40,839,000 persons, 19,591,000 being males and 21,248,000 females.

The current year's total is 194,000 in excess of the corresponding mid-1935 estimate and represents an estimated rate of growth of 0·48 per cent. per annum during the past year, a figure which may be compared with the 10-year increases of 5·53 per cent. and 4·93 per cent. recorded in respect of the decennia 1921-31 and 1911-21 respectively. (*See General Tables volume Census, 1931, Table I.*)

The method adopted in arriving at the current estimates is that which has been used with apparent success in past periods and consists of taking the 1931 Census as a starting point, adding the births and immigrants and deducting deaths and emigrants between the date of the Census and the 30th June, 1936. Of the elements entering into the computation, the records of births and deaths are believed to be precise and complete, so that such estimation error as may be inherent in the final result may be regarded as attaching almost wholly to the allowances included in respect of migration. For the latter, recourse is had to the statistics of migration periodically compiled by the Board of Trade and to departmental records of the movements of the Defence Forces; these are incomplete however, in that they afford no guide to the passenger traffic between the several countries of the United Kingdom nor to the possible effect on the home population of changes in the personnel of the mercantile marine, the allowance for which is a matter of judgment based upon past experience qualified as may seem to be required by current conditions. The error to which the population estimates are subject is one which may be expected to grow in degree as the preceding census becomes more remote.

The mid-1936 population estimate of 40,839,000 is some 887,000 in excess of the 1931 census figure, of which excess about 599,000

may be assigned to natural increase, leaving 288,000 to be ascribed to the miscellaneous movements summed up in the term migration. It is of interest to observe (from Part II of the Statistical Review Table S) that the net balance of migration which for several decades has, on the whole, been consistently outward in character, appears since about 1930, to have shown a definite inward tendency, thus affording some numerical compensation for the lowness of the level to which the numbers of births have fallen.

Age Distribution.—The estimated sex-age distribution of the national population, shown in Table 1 of Part I of the Tables section of this volume, has been obtained from the corresponding 1935 distribution by the survivorship method customarily adopted for the purpose; this briefly consists of (1) obtaining the year's deaths arising from the population at each age in 1935, and treating the survivors as the population at the next higher age in 1936, (2) completing the table by the addition of the population aged 0–1, represented by the survivors at the middle of 1936 of the births occurring between the middle of 1935 and the middle of 1936, and (3) adjusting the results of these two operations in respect of the balance of population movement in accordance with such age statistics as are available in respect thereof.

The average ages of the mid-1936 population according to the estimated age distribution are 32·9 and 34·8 for males and females respectively, figures which compare with averages of 31·8 and 33·5 in 1931 or 29·9 and 31·2 in 1921.

Local Populations.—The 1936 estimates of the populations of all Boroughs, Urban Districts and Rural Districts in England and Wales are shown in Table 17 of Part I and Table E of Part II of the current Statistical Review; the figures in respect of areas which have been subject to boundary changes during the year are further amplified in the Appendix to Part II where the changes are set out in detail.

The estimates on this occasion possess an added significance on account of the fact that they constitute a principal factor in the basis of the distribution of large exchequer monies under the Local Government Act of 1929. Their use for such purpose necessitated the utmost care in their preparation and, though the general methods adopted were not significantly different from those customarily employed, additional tests and special measures were instituted in order that the errors, inherently inseparable from computed estimates, should fall within the lowest attainable limits.

In the first place, all local authorities were themselves circularized with a view to securing that any statistical data bearing upon the question, which might have become available in the course of local administration should be brought to the notice of the Department. A substantial number of local authorities responded to this invitation

and very careful consideration was given to the variety of information thus supplied.

At the same time local registrars of births and deaths were required to report on the populations of large institutions and similar special premises in order to secure the proper representation of those elements of the community of which the changes from time to time might not readily be reflected by the normal methods of estimation.

The principles and methods underlying the construction of the estimates are generally similar, as indicated above, to those adopted in past years, but since the results occasionally differ, sometimes materially, from corresponding estimates computed by local authorities or other interested persons, it will be of advantage to reproduce the following extracts from a memorandum, setting out the procedure and calling attention to some of the pitfalls attending the estimation, which has been issued to local authorities and others who have asked for explanation regarding the figures in which they are interested.

In accordance with custom, the estimates represent the calendar year as a whole and may accordingly be regarded as referring to the position at the middle point of the year viz., 30th June, 1936. Further, they purport to represent 'resident' populations and are, in this respect, different in principle from census populations which consist simply of the persons who happened to be enumerated in the several areas on census night, whether resident in the area of enumeration or not.

The estimation procedure may, on these premises, be said to consist of first adjusting the enumerated census populations of 1931 to conform to a distribution by residence—in accordance with the statements of 'usual residence' on the census returns themselves* and then modifying the basic resident population in accordance with available evidence of changes in population which have occurred between the date of the census and the 30th June, 1936.

The identification of changes in resident populations between the census date and the 30th June, 1936, may be conveniently separated into the two portions representing natural increase (or decrease) and migration.

The element of natural increase (or decrease), that is, the difference between births and deaths, is obtainable almost exactly in any and every area from registration records, and occasions no difficulty whatever.

In respect of migration movements, however, specific records do not exist, and inferences have to be drawn from other and less direct sources of information. Of these, the most fruitful are the

* Special adjustments were made in respect of boarding schools, colleges, etc., to secure that their resident scholars and staffs were credited to the areas in which the schools, etc., were situated.

successive registers of Parliamentary electors. The numbers on the register by virtue of a residence qualification correspond very closely with the adult resident population; the registers are revised each year as the result of a canvass undertaken by local authorities themselves and the changes in the register should therefore represent, with minor exceptions, changes in the population aged 21 and over. But a change thus disclosed for an area is not wholly due to migration: part arises from the admission to the register of persons attaining franchise at age 21 and part from removals from the register on account of death. These elements have accordingly been severally allowed for in respect of each area and the balances remaining have been regarded as providing a reasonable picture of the incidence of internal migration within the country so far as the bulk of the adult population is concerned. In respect of the relatively smaller migration movements amongst the population under age 21, distinction has been drawn between younger and older children. Experience shows that while up to about school leaving age, the incidence of movement is related to that of adults, at the higher juvenile ages, it is also influenced by the distribution of employment opportunities. These movements have been separately assessed in accordance with such information as was available in respect of them.

Finally, changes in the resident population of large institutions or other special premises which would not be reflected by general records have been ascertained by local enquiry and incorporated in the resultant estimates.

Population estimates, computed in the foregoing manner were prepared for all areas in the country and each was then examined in relation to the local areal development represented by the construction of new dwellings. Housing statistics are not regarded as satisfactory indicators of their population contents for a number of reasons. For example, the records of dwellings demolished or converted to other uses are not so complete as the returns of new buildings; and again, there is great variability in the extent to which the occupants of new dwellings are divided between newcomers to the area and others from within the area itself, especially where allocations have been made on account of slum replacements or overcrowding relief. Tests were, however, made wherever housing records were available and were found to support the prepared estimates in respect of a majority of areas. Where it appeared from the examination that the estimates might reasonably be suspected of being unduly low or high, the circumstances were further considered in relation to census and later data and where conditions warranted it, adjustments were introduced in accordance with an arranged scheme within the latitude allowed by the overriding condition that the estimates of local areas should aggregate to the more reliable and previously approved population estimate for the country as a whole.

Changes in boundary between the date of the census and the 30th June, 1936 have been fully allowed for and the estimate for an area which has been subject to boundary alterations represents the full year's population for the area as constituted on the 30th June, 1936.

Notwithstanding the care devoted to their consideration and preparation, it must be remembered that estimates are essentially different from ascertained facts in that, however formed or by whomsoever prepared, they cannot claim to be free from some margin of error. The 1936 estimates have been framed upon a plan uniformly and impartially applied to each area and designed with a view to restricting the error within the smallest possible field. Nevertheless they remain estimates only, the exactness of which is incapable either of proof or disproof.

The estimate of every area is related to the estimates of adjacent and more distant areas. Every estimate may be regarded as representing a collective judgment in respect of a number of factors, each indicating a different degree of increase or decline in population and all capable of varied interpretation; criticism based upon partial evidence or selected factors alone can only result in a distorted view of an estimate as a whole.

It will be appreciated that an adequate discussion of the interplay of all the factors contributing to the estimate of each of the 1,550 odd Boroughs and Districts into which the country is divided would present an altogether impossible task and in these circumstances, the Registrar-General, while regretting that it does not seem possible to him to engage in discussion of individual estimates, desires to call attention to certain general misconceptions or sources of error into which, from the experience of recent years, critics of the estimates may be liable to fall :—

(a) The estimates refer to the position as at the 30th June, 1936, and not as at the 31st December, 1936.

(b) The estimates purport to represent resident populations which are different in principle from Census populations as indicated earlier in this memorandum.

(c) In comparing population changes with changes in the numbers of electors, it must be borne in mind that the latter consist of adults only and that, in the general population at the present time, while the number of adults is increasing, the numbers below age 21 are declining.

Speaking generally, a high rate of electoral increase in a given area usually denotes a much lower rate of population increase; a slowly increasing electorate may indicate a stationary or declining population, while a stationary or declining electorate almost certainly indicates a fall or much larger fall in total population.

(d) Similarly in connection with housing comparisons, populations cannot be regarded as changing in simple relationship with the changes in the numbers of dwellings available. This may be illustrated by reference to conditions in the country as a whole. Between the date of the Census and the 30th June, 1936, some 1,400,000 new dwelling houses have been completed. During the same period, the increase in the total population of the country is estimated to have been less than 900,000, (i.e. less than two-thirds of a person per new house) from which it is evident that the bulk of the population in the new houses is not additional population, but is population drawn from the inhabitants of property in existence prior to the census of 1931, the occupants of which have thereby been correspondingly diminished.

The remarkable decline in the average size of families is a feature which has been noted in the Census records of almost every area in the country; and no estimate of population movement could be regarded as valid which, while taking account of the occupants of new dwellings, ignored the equally important, if less tangible, decline that is taking place in the population of the older houses.

(e) Finally, it is to be observed that the 1935 estimates have been wholly disregarded in the preparation of the 1936 figures. These have been computed afresh on the basis of the 1931 census record and the post censal records of change, and the difference between the estimates of 1935 and 1936 cannot be regarded, therefore, as necessarily representing an estimate of the 1935-36 movement. In a majority of areas, the trends observable up to 1935 have been confirmed and extended into the succeeding year but, where circumstances have appeared to warrant it, there has been no hesitation in modifying the tendencies of earlier estimates in the light of later and completer information available in respect of them.

Institutions.—In the Census classification of population according to residence, the populations of institutions, *e.g.*, Public Assistance Institutions, Infirmarys, Hospitals, Mental Institutions, etc., were dispersed to their home areas where it was anticipated that they would be discharged within a period of six months; otherwise they were retained in the Institution area. This convention is reflected in the current population estimates but is not precisely identical with the procedure in the areal classification of deaths where it is customary to transfer all institution deaths to former area of residence (if known) irrespectively of the time spent in the Institution.

Local Age Distributions.—Sex and age distributions for large geographical regions of the country are shown in Table 2 of Part I. The populations at ages under five were obtained by the survivorship

method (*see* page 166), and for later ages the predetermined total populations, obtained as described in the preceding section, were distributed in accordance with the 1931 census age and sex distribution of the unit, the resulting figures being thereafter modified to allow for the change between the date of the Census and the middle of the year 1936 in the age distribution of the total population of the country.

United Kingdom and Irish Free State.—The populations of each of the countries of the United Kingdom and of the Irish Free State, as estimated by their respective Registrars-General, are shown for each year from 1897 in Table A of Part II.

MARRIAGES.

The marriages registered in England and Wales during the year 1936 numbered 354,644, corresponding to a rate of 17·4 persons married per 1,000 of the population of all ages and conditions. The number so registered is 5,108, or 1·46 per cent. more than the number registered in 1935, and apart from the year 1915 and the years immediately following the war, 1919 and 1920, is the largest number in any year since the commencement of civil registration in 1837. The rate of 17·4 in 1936 is higher than any of the rates recorded in the post-war years 1921 to 1935, and, apart from 1915, 1919 and 1920, it has not been exceeded since 1873 when there was a rate of 17·6. The highest rate attained since 1838 (except for the years 1915, 1919 and 1920) was 17·9 in 1853. (*See* Part II Tables B and C.)

The preference for the third quarter, noticeable in the records since the beginning of the present century, was maintained in 1936, the marriages in this period being 32·6 per cent. of the total, while the fourth, formerly the outstanding favourite, ranks third out of the four. The rate for the first quarter, 9·8 persons married per 1,000 population, follows the usual rule in being the least of the four. The proportion of marriages contracted in the first quarter was only 14·1 per cent. of the total.

In the following table (XCIX) the marriages of a series of years are compared with the unmarried population at all ages over 15. By eliminating the progressively falling proportion of children under 15 from the population at risk, the rates of recent years are scaled down slightly in relation to those of earlier periods, but the principal interest of the table is in showing the difference in the course of the rates as between the two sexes. The actual difference between the male and female ratios is due to the inequality of the numbers of unmarried men and women in the population, and since the former have always been in a minority—which has been unduly exaggerated as a result of the war—it is their numbers which primarily determine the marriageability of the population, so that, from one point of view, the male

ratios may be regarded as providing the better indexes to the variations that have occurred from time to time in the incidence of marriage. In Table C (Part II), the series is taken back to 1896. The male rate in 1936, 60·1 per 1,000, is higher than any rate since 1921, and the female rate, 46·9, higher than any since 1920.

Table XCIX.—Annual Number of Marriages of Men and Women per 1,000 Unmarried Population of each Sex aged 15 and over, 1871–1936.

NOTE.—For the census years 1871 to 1931 the annual numbers of marriages have been taken as the average of the three years about each census. From 1920 the rates for individual years are shown.

Year.			Bachelors, Widowers, Spinsters and Widows.	Bachelors and Widowers.	Spinsters and Widows.
1871	..	..	57·2	62·3	52·9
1881	..	..	51·5	56·0	47·6
1891	..	..	49·8	54·6	45·7
1901	..	..	48·7	53·5	44·7
1911	..	..	46·3	50·8	42·5
1921	..	..	54·1	62·7	47·6
1931	..	..	46·7	53·3	41·5
1920	..	..	61·7	71·5	54·7
1921	..	..	52·1	60·4	45·8
1922	..	..	48·2	55·8	42·5
1923	..	..	46·6	53·9	41·1
1924	..	..	46·6	53·6	41·2
1925	..	..	46·2	53·3	40·9
1926	..	..	43·4	50·0	38·3
1927	..	..	47·5	54·8	41·9
1928	..	..	46·4	53·7	40·9
1929	..	..	47·7	55·2	41·9
1930	..	..	47·8	55·6	42·0
1931	..	..	46·8	53·4	41·6
1932	..	..	46·1	52·6	41·1
1933	..	..	48·1	54·9	42·8
1934	..	..	52·2	59·6	46·4
1935	..	..	52·5	59·9	46·8
1936	..	..	52·7	60·1	46·9

Fluctuations of the general Marriage-rate in different Sections of the Country.—In Table C comparison is made of the year's marriages and marriage-rates in large geographical sections of the country, and an analysis of the rates in regions and counties is shown in Table F (Part II).

The determination of marriage-rates for localities is not wholly satisfactory. In a large proportion of cases the district of registration is the district of residence of only one of the parties and in some

cases of neither. This difficulty, however, is of less moment in comparisons between large sections of the country than between smaller adjacent localities.

Among males, the highest frequency occurs in Midland I (64·7 per 1,000 aged 15 and over); but North III (62·8) Midland II (62·3) and the South-East (62·2) have frequencies that are not far behind. These are the only regions in which the average of 60·1 is exceeded. Among females the highest places are occupied by Wales I and North I as in 1934 and 1935. The lowest frequency, for both males and females, is recorded in Wales II.

Table C.—Marriage-rate per 1,000 Unmarried Population aged 15 and over in Geographical Sections of the Country.*—1935 and 1936.

Area.	Ratio of un-married males per 1,000 un-married females aged 15 and over (Census 1931).	Rate per 1,000 Unmarried Population aged 15 and over.				Ratio of local rate to England and Wales rate (taken as 1,000).			
		1935.		1936.		1935.		1936.	
		Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
England and Wales.	778	59·9	46·8	60·1	46·9	1,000	1,000	1,000	1,000
South-East ..	711	61·6	44·0	62·2	44·5	1,028	940	1,035	949
North ..	796	59·6	47·7	59·3	47·5	995	1,019	987	1,013
North I ..	959	57·1	55·1	55·9	54·0	953	1,177	930	1,151
North II ..	866	53·3	46·4	53·6	46·8	890	991	892	998
North III ..	794	62·1	49·6	62·8	50·2	1,037	1,060	1,045	1,070
North IV ..	736	60·6	44·9	59·9	44·4	1,012	959	997	947
Midland ..	807	63·4	51·5	63·9	51·9	1,058	1,100	1,063	1,107
Midland I ..	797	64·1	51·4	64·7	52·0	1,070	1,098	1,077	1,109
Midland II ..	826	62·1	51·6	62·3	51·8	1,037	1,103	1,037	1,104
East ..	878	53·8	47·5	54·9	48·5	898	1,015	913	1,034
South-West ..	743	55·3	41·4	54·9	41·1	923	885	913	876
Wales ..	986	51·5	51·0	50·9	50·5	860	1,090	847	1,077
Wales I ..	1,060	53·3	56·8	52·4	55·9	890	1,214	872	1,192
Wales II ..	833	46·8	39·2	46·9	39·4	781	838	780	840

* For the constitution of the several sections, *see* page 23

From the analysis in Table F it will be seen that, among the counties there compared, the 1936 marriage-rate is highest in London, where it exceeds the mean for the country by 24·1 per cent. followed in order by Warwickshire, Staffordshire and Bedfordshire, with excesses ranging from 9·8 to 6·3 per cent. In England the lowest rates occur in Rutland (14·5) and Hereford (14·6) but in Wales the counties of Anglesey, Cardigan, Merioneth, Montgomery and Pembroke all return lower rates than these.

The City of London returns a rate nearly six times as high as the average of England and Wales; and, of the Metropolitan Boroughs, several have high rates, notably Holborn and Westminster where rates of about twice the average are found. Such rates give

support to the belief that many persons who usually live in the provinces or abroad come to London to be married. At the census of 1931 these three areas returned higher proportions of population living in hotels, boarding-houses, etc., than any of the other Metropolitan Boroughs. Only two of the Metropolitan Boroughs—Bethnal Green and Stoke Newington—have rates which are lower than the average for England and Wales. Among the county boroughs distinguished, the highest rates occur in West Ham, Coventry, Dudley, and West Bromwich, and the lowest in Southport and Hastings. With but few exceptions, the county boroughs have higher rates than the counties with which they are associated.

Marriage rates by ages, which provide a more exact statement of the incidence and intensity of marriage than the aggregate rates just considered, are shown in Table CI. The rates for 1871 to 1931, being based on enumerated populations, are liable to rather smaller errors than those for 1932 to 1936 which are based on post-censal estimates of population.

It will be observed from the last column of Table CI, which compares the actual marriages of each year with a standard number, viz., those expected according to the age rates of 1921, and which makes allowance, therefore, for the changing age constitution of the unmarried population, that of the four sections distinguished, bachelors, widowers, spinsters and widows, the 1936 frequencies are lower than those of 1921 (except for spinsters), the percentages to the 1921 frequencies being, in order, spinsters 112·7, bachelors 92·1, widowers 85·7 and widows 74·3. On this basis of comparison the marriage frequencies among bachelors and spinsters are higher than in recent years, and almost as high as in 1871; while those for widowers and widows depart little from the average of the five years 1931-35.

From the age analysis shown in the earlier columns of Table CI, it will be seen that with unimportant exceptions the 1936 rates for bachelors, widowers and widows have decreased as compared with those for 1921 in all age-groups, but that for spinsters they have increased in all age-groups, except 45-55. The maintenance of the marriage-rate of young spinsters at a point well in excess of the corresponding rates of pre-war years has been a feature of the returns of recent years. With both bachelors and spinsters, the rates for the age period 25-35, at which more than one-half and one-third respectively of the marriages of these classes take place, are higher than those of any pre-war year shown in the table, while for bachelors the excess extends to all higher ages. Increases in the age rates of 1936 over those of 1935 are recorded for bachelors at all ages over 20; for widowers, up to 25 and at 35-45; for spinsters at ages 20 to 45, and for widows, up to 25 and at 45-55.

Widowers' and widows' rates as compared with 1921 show a consistent fall in all the age divisions identified except under 20 where the numbers are too small to yield reliable rates. Widowers'

Table CI.—Annual Marriage-rate per 1,000 Bachelors, Widowers, Spinsters and Widows respectively at each of several Age Periods, 1871–1936.

NOTE.—Prior to 1921 the annual numbers of marriages have been taken as the average of the three years about each Census.

Year.	Annual marriage-rate per 1,000 in each age group.						Marriage-rate per 1,000 population over 15 in each class.	Ratio to corresponding rate for 1921 taken as 1000.	Marriage-rate which would have resulted had the 1921 age rates been in operation.	Ratio of actual marriage rate (col. 8) to rate in previous column (10).
	15—	20—	25—	35—	45—	55 and over.				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
BACHELORS.										
1871 ..	6.0	122.4	119.3	43.3	15.3	3.2	61.7	987	62.3	990
1881 ..	4.6	106.8	112.4	40.5	14.3	3.0	55.7	891	62.4	893
1891 ..	3.1	94.7	122.4	43.4	15.2	3.5	54.8	877	63.8	859
1901 ..	2.5	85.9	123.7	44.2	14.6	3.3	54.7	875	66.6	821
1911 ..	2.2	74.8	120.6	44.4	14.9	3.9	52.6	842	69.2	760
1921 ..	3.4	94.4	161.1	61.6	19.7	5.5	62.5	1,000	62.5	1,000
1931 ..	3.3	72.3	140.3	52.7	18.1	5.7	56.2	899	67.7	830
1932 ..	3.4	69.7	136.9	51.1	16.9	5.2	55.5	888	68.7	808
1933 ..	3.4	70.4	142.2	51.3	18.3	5.4	58.2	931	70.2	829
1934 ..	3.6	75.0	153.2	54.7	19.0	5.4	63.7	1,019	71.6	890
1935 ..	3.2	76.7	155.2	57.3	18.6	5.3	64.1	1,026	70.9	904
1936 ..	2.7	79.8	156.3	59.4	19.1	5.5	64.4	1,030	69.9	921
WIDOWERS.										
1871 ..	11.5	229.0	288.5	181.5	88.3	15.9	65.8	1,475	56.0	1,175
1881 ..	30.6	192.9	246.5	157.8	76.9	16.0	58.2	1,305	56.0	1,039
1891 ..	14.1	153.4	231.7	151.1	74.7	15.5	53.4	1,197	53.7	994
1901 ..	—	132.6	201.7	134.1	65.3	13.5	44.4	996	51.0	871
1911 ..	—	121.6	171.2	117.9	59.4	12.7	36.9	827	47.4	778
1921 ..	14.3	163.7	229.3	155.2	73.5	15.8	44.6	1,000	44.6	1,000
1931 ..	62.5	98.1	179.8	122.3	65.4	14.8	33.1	742	38.5	860
1932 ..	—	103.9	177.6	124.3	62.7	14.0	31.8	713	38.1	835
1933 ..	—	95.3	177.2	125.6	64.9	14.2	31.9	715	37.6	848
1934 ..	—	96.5	181.9	128.1	66.7	14.3	32.1	720	37.1	865
1935 ..	—	105.1	185.2	125.7	67.6	14.4	31.9	715	36.7	869
1936 ..	142.9	115.4	177.9	126.7	66.3	14.1	31.1	697	36.3	857
SPINSTERS.										
1871 ..	26.8	133.7	85.9	30.4	11.9	1.7	63.1	1,164	55.8	1,131
1881 ..	21.5	121.9	80.6	26.3	10.4	1.6	56.9	1,050	55.8	1,020
1891 ..	16.2	112.4	85.7	26.4	10.3	1.7	54.4	1,004	57.1	953
1901 ..	12.9	104.9	88.6	25.3	9.1	1.5	53.0	978	58.6	904
1911 ..	11.2	97.7	91.1	24.4	8.5	1.8	50.6	934	58.0	872
1921 ..	14.8	114.4	100.0	25.6	8.9	2.0	54.2	1,000	54.2	1,000
1931 ..	17.1	106.9	97.2	22.3	8.3	2.2	51.9	958	53.9	963
1932 ..	17.7	105.1	96.4	22.1	7.8	2.1	51.6	952	54.1	954
1933 ..	18.7	109.2	101.2	22.5	8.1	2.3	54.3	1,002	54.5	996
1934 ..	20.3	118.6	110.1	24.4	8.3	2.1	59.4	1,096	55.0	1,080
1935 ..	19.1	123.2	111.8	25.2	8.6	2.1	59.9	1,105	54.4	1,101
1936 ..	18.4	129.2	112.1	26.4	8.6	2.1	60.3	1,113	53.5	1,127
WIDOWS.										
1871 ..	55.4	170.5	125.5	55.7	20.8	2.6	21.1	1,172	19.6	1,077
1881 ..	56.6	155.3	114.5	50.2	18.6	2.6	18.2	1,011	18.5	984
1891 ..	49.3	150.4	114.3	50.3	17.8	2.4	16.3	906	16.8	970
1901 ..	54.9	140.7	115.9	48.9	15.6	2.1	14.4	800	15.6	923
1911 ..	30.0	151.2	114.1	48.9	15.6	2.1	12.5	694	13.6	919
1921 ..	36.1	191.4	120.3	50.6	17.6	2.5	18.0	1,000	18.0	1,000
1931 ..	57.1	140.8	93.0	33.2	13.6	2.2	8.7	483	11.7	744
1932 ..	14.3	153.2	84.8	31.9	12.3	2.1	8.0	444	11.4	702
1933 ..	45.5	137.7	87.0	32.2	12.2	2.1	7.9	439	11.2	705
1934 ..	83.3	158.4	89.8	33.1	13.0	2.1	8.0	444	11.0	727
1935 ..	—	166.3	90.5	34.5	12.8	2.2	8.0	444	10.7	748
1936 ..	104.5	170.0	88.2	34.4	12.9	2.2	7.8	433	10.5	743

rates are largely in excess of the corresponding bachelors' rates, so that it may be said that re-marriages in the case of males are relatively more frequent than first marriages. Comparison of the rates for spinsters and widows shows that the latter have the advantage in all age groups except at 15-20 and 25-35. The age analysis serves to call attention to the misleading nature of the comparison suggested by the aggregate marriages per 1,000 population shown in column 8 of Table CI; owing to the concentration of the single population at the younger ages where marriages are numerous, and the widowed population at the later ages where they are few, the aggregate rate for the single of each sex appears to be vastly in excess of that of the widowed, whereas, if allowance be made for the difference in their age constitutions, the relative positions are modified and, for nearly all age-groups, are in favour of the widowed.

Table CII shows how the proportions of first marriages and re-marriages have varied from 1918 to 1936. In 1936 there

Table CII.—Proportions of First Marriages and Re-marriages in 1,000 Marriages, 1918-1936.

Year.	Men.		Women.		Bachelors who married—		Widowers who married—	
	Bachelors.	Widowers.	Spinsters.	Widows.	Spinsters.	Widows.	Spinsters.	Widows.
1918	901	99	894	106	837	64	57	42
1919	897	103	875	125	816	81	59	44
1920	907	93	894	106	839	68	55	38
1921	911	89	909	91	855	56	54	35
1922	913	87	920	80	866	47	54	33
1923	915	85	929	71	875	40	54	31
1924	916	84	932	68	880	36	53	31
1925	916	84	937	63	884	32	53	31
1926	917	83	940	60	887	30	53	30
1927	918	82	942	58	890	28	52	30
1928	921	79	943	57	893	28	50	29
1929	920	80	946	54	894	26	51	29
1930	923	77	949	51	897	25	51	27
1931	924	76	950	50	900	24	50	26
1932	925	75	953	47	903	22	50	25
1933	926	74	954	46	904	22	50	24
1934	930	70	956	44	909	21	47	23
1935	931	69	957	43	910	21	47	23
1936	932	68	958	42	912	20	45	22

was a higher proportion of first marriages, and consequently, a lower proportion of re-marriages, than in any of the previous years. An increasing trend in the proportion of first marriages is observable for both sexes, and especially for women, since 1919.

Tables L and K, which appear in Part II of this Review, continue the series shown in previous issues of the Text Volume (Tables LXXXVI and LXXXVII in the volume for 1930). They classify by age the marriages of a number of years, the former giving the mean ages of the persons married in each of the possible combinations, and the latter extending the analysis into a number of age-groups. Table K shows that, during the last 50 years or so, the modal age of marriage has tended to increase steadily among bachelors and spinsters and the proportion marrying under 21 years of age to decrease. For bachelors, the most popular age has passed from 21–25 to 25–30 and for widowers, from 35–40 to 50–55, while for spinsters and widows, although the modal group has not changed—being 21–25 for the former and 35–40 for the latter—the position of the mode has risen within the group. The proportion marrying under 21 years of age has decreased from 7·1 per cent. in 1886–90 to 3·5 in 1936 for bachelors, and from 21·5 to 15·1 for spinsters.

Table G shows that more men married at age 25 and more women at age 23 than at any other age. Table J shows the ages of husbands and wives in combination. Among those under 25, for whom the data are given by single years of age, there is a tendency for brides to be about a year younger than bridegrooms.

Marriages of Minors.—Of the males married during the year, 11,695, or 3·30 per cent., were under the age of 21, and of the females 51,166, or 14·4 per cent., as compared with 3·73 per cent., and 14·9 per cent. last year respectively (*see* Tables M and CIII). The male rate is lower than any recorded and is less than half of that shown for 1876–80. Females, who have always greatly outnumbered the males in this class—in the present year the ratio is more than 4 to 1—naturally show the highest rates and the greatest changes in the rate; they formed 18·8 per 1,000 of the unmarried and widowed females aged 15–21 in 1911, were 26·6 in 1920, and are now 27·7, while the corresponding rates for males were 5·5, 8·8 and 6·1 per 1,000 respectively (*see* Table CIV).

Comparative figures are shown in Table CIV for certain years back to 1901, before which the age-group 15–21 was not identified in the population returns; an indication of the trend of youthful marriage-rates in earlier periods may be gained from Table CIII.

The proportions of males and females marrying under age are summarised for regions in Table CV, and the numbers are stated in Table M. Much of the variation there shown is but a reflex of the incidence of the general marriage-rate (Table C),

Table CIII.—Minors Married per 1,000 Marriages at all Ages, 1876-1936.

Year.	Husbands.	Wives.	Year.	Husbands.	Wives.
1876-80 ..	77.8	217.0	1921 ..	48.2	149.2
1881-85 ..	73.0	215.0	1922 ..	44.4	144.4
1886-90 ..	63.2	200.2	1923 ..	42.5	142.9
1891-95 ..	56.2	182.6	1924 ..	40.4	140.3
1896-1900 ..	51.2	168.0	1925 ..	40.6	142.3
1901-05 ..	46.3	153.1			
1906-10 ..	40.3	139.4	1926 ..	43.3	147.5
1911-15 ..	39.2	136.6	1927 ..	41.4	146.1
1916-20 ..	42.6	133.3	1928 ..	43.5	151.5
1921-25 ..	43.3	143.9	1929 ..	41.8	151.7
1926-30 ..	42.5	150.5	1930 ..	42.6	155.3
1931-35 ..	40.8	155.6			
			1931 ..	43.5	158.5
1917	41.7	134.2	1932 ..	43.6	160.4
1918	42.6	129.0	1933 ..	40.8	157.9
1919	43.7	129.4	1934 ..	39.1	153.0
1920	46.8	142.9	1935 ..	37.3	149.3
			1936 ..	33.0	144.3

Table CIV.—Annual Marriage-rate per 1,000 Unmarried and Widowed Persons in the age-group 15-21 in 1901, 1911, 1921, 1931 and 1927-36.

Year.	Males.		Females.	
	Rate.	Ratio to 1921. Per Cent.	Rate.	Ratio to 1921. Per Cent.
1901	6.7	87	21.6	92
1911	5.5	71	18.8	80
1921	7.7	100	23.4	100
1931	6.7	87	24.8	106
1927	6.0	78	21.6	92
1928	6.2	81	22.1	94
1929	6.2	81	23.0	98
1930	6.4	83	24.0	103
1931	6.7	87	24.8	106
1932	6.8	88	25.4	109
1933	6.8	88	27.1	116
1934	7.3	95	29.7	127
1935	6.9	90	28.8	123
1936	6.1	79	27.7	118

and regard must necessarily be had to the latter in considering how far the former provides evidence of local custom regarding early marriage. In 1936 the areas in which the proportion of male minors marrying is highest are Midland II and North III. For females, the corresponding areas are Wales I and North I. The lowest proportion for males is returned in Wales II, and for females in North IV. As between 1935 and 1936, decreases are recorded for both sexes and in all regions.

Table CV.—Marriage-rate of Minors per 1,000 Unmarried Population aged 15–21 in Geographical Sections of the Country, 1935 and 1936.

Area.	1935.				1936.			
	Rate per 1,000 Unmarried Population 15–21.		Ratio of local rate to England and Wales rate taken as 1,000.		Rate per 1,000 Unmarried Population 15–21.		Ratio of local rate to England and Wales rate taken as 1,000.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
England and Wales.	6·9	28·8	1,000	1,000	6·1	27·7	1,000	1,000
South-East	6·0	26·5	870	920	5·5	25·7	902	928
North ..	7·6	29·8	1,101	1,035	6·4	28·0	1,049	1,011
North I ..	6·7	36·8	971	1,278	5·2	34·1	852	1,231
North II ..	7·4	30·7	1,072	1,066	6·4	30·2	1,049	1,090
North III ..	8·3	31·7	1,203	1,101	7·2	31·2	1,180	1,126
North IV ..	7·6	26·2	1,101	910	6·4	23·8	1,049	859
Midland ..	8·0	28·8	1,159	1,000	6·8	28·2	1,115	1,018
Midland I ..	7·6	27·8	1,101	965	6·5	27·6	1,066	996
Midland II	8·8	31·0	1,275	1,076	7·3	29·5	1,197	1,065
East	6·7	32·2	971	1,118	6·5	31·9	1,066	1,152
South-West ..	6·0	28·4	870	986	5·3	27·6	869	996
Wales ..	6·6	35·2	957	1,222	6·1	34·4	1,000	1,242
Wales I ..	7·4	38·9	1,072	1,351	6·7	38·1	1,098	1,375
Wales II ..	4·4	24·8	638	861	4·3	24·3	705	877

Divorces and Remarriages of Divorced Persons.—The annual numbers of marriages dissolved or annulled are shown in Table O and again in Table CVI in terms of the persons involved, for each year since 1921 and for each quinquennium since 1876–80.

During the year 1936, 3,922 divorces and 135 annulments were obtained, the number of persons involved being twice these figures, or a total of 4,057 of each sex.

The number of divorces, which attained a maximum of 4,199 in 1934 fell to 3,942 in 1935 and to 3,922 in the current year. The numbers are six or seven times as large as those of the years 1901 to 1910. The number of annulments in 1936 is larger than in any previous year.

From Table CVI it will be seen that the number of persons who on remarriage described themselves as divorced shows an increase and is greater than the corresponding figure recorded for any earlier year. In view of the increasing numbers of divorces, an increasing trend in such marriages is to be expected. There are substantial increases in each of the categories distinguished. The numbers may understate the facts owing to misdescription of status in the registers.

In Table P are given certain particulars concerning the marriages in respect of which suits for dissolution or annulment were commenced during the year. 4,515 petitions were filed at the Principal Registry in London and 1,234 at 38 District Registries. In respect of the petitions filed at the Principal Registry in London, the most frequent duration of marriage at the date of the commencement of the proceedings is from 5-10 years with an average of 282 for each of those years of duration, but the maximum is not of particular significance, for this period only accounts for 31 per cent. of the cases, there being 14 per cent. of shorter duration, while in 55 per cent. the marriages had subsisted for 10 years or more. Forty-three per cent. of the marriages in question were childless, and in

Table CVI.—Annual Number of Persons Divorced, and of Divorced Persons who Remarried, 1876-1936.

Period.	Number of Persons Divorced.	Annual Number of Divorced Persons who remarried.							
		Total.	Men.	Women.	Divorced men marrying spinsters.	Divorced men marrying widows.	Divorced men and women inter-marrying.	Divorced women marrying bachelors.	Divorced women marrying widowers.
1876-80 ..	554	104	56	48	42	12	4	31	15
1881-85 ..	671	128	68	60	53	12	6	42	15
1886-90 ..	707	169	80	89	65	11	8	65	20
1891-95 ..	744	214	110	104	89	15	12	75	23
1896-1900 ..	980	345	172	173	138	24	20	126	37
1901-05 ..	1,126	509	262	247	205	38	38	181	47
1906-10 ..	1,247	693	356	337	276	53	54	253	57
1911-15 ..	1,312	820	411	409	330	50	62	309	69
1916-20 ..	3,019	1,264	683	581	525	127	62	439	111
1921-25 ..	5,467	3,050	1,708	1,342	1,316	295	194	976	269
1926-30 ..	6,716	3,917	2,128	1,789	1,662	270	392	1,225	368
1931-35 ..	8,022	5,154	2,777	2,377	2,179	302	592	1,597	484
1921.. ..	7,044	2,878	1,592	1,286	1,182	330	160	939	267
1922.. ..	5,176	3,374	1,913	1,461	1,457	360	192	1,062	303
1923.. ..	5,334	3,008	1,679	1,329	1,307	279	186	1,002	234
1924.. ..	4,572	2,903	1,627	1,276	1,267	275	170	931	260
1925.. ..	5,210	3,088	1,729	1,359	1,367	229	266	944	282
1926.. ..	5,244	3,124	1,710	1,414	1,325	231	308	995	265
1927.. ..	6,380	3,576	1,924	1,652	1,509	244	342	1,133	348
1928.. ..	8,036	4,125	2,268	1,857	1,764	302	404	1,299	356
1929.. ..	6,792	4,427	2,408	2,019	1,886	307	430	1,357	447
1930.. ..	7,126	4,331	2,330	2,001	1,826	267	474	1,342	422
1931.. ..	7,528	4,668	2,517	2,151	1,963	299	510	1,456	440
1932.. ..	7,788	4,824	2,537	2,287	2,011	259	534	1,539	481
1933.. ..	8,084	5,068	2,747	2,321	2,135	318	588	1,571	456
1934.. ..	8,574	5,545	3,026	2,519	2,378	321	654	1,662	530
1935.. ..	8,138	5,662	3,056	2,606	2,407	312	674	1,758	511
1936.. ..	8,114	6,468	3,507	2,961	2,788	354	730	2,009	587

a further 31 per cent. there was one child only. These figures are substantially similar to those recorded in the years 1931 to 1935.

Buildings in which Marriages may be Solemnized.—At the end of the year 1936 the numbers of churches or chapels of the Established Church and of the Church in Wales and of registered buildings in which marriages could be legally solemnized, were as follows :—

		Number added in 1936.	Increase per cent. since 1921.
		—	—
Established Church and Church in Wales	... ..	16,555	25
All other religious denominations		21,233	189
Total	... ..	<u>37,788</u>	<u>214</u>
			<u>10·3</u>

The number of these buildings belonging to the various denominations is shown for the several geographical regions in Table N, which thus provides some indication of the relative strength of the various religious bodies in different parts of the country.

By the Acts 15 and 16 Vict. c. 36, and 18 and 19 Vict. c. 81, it was enacted that all places of religious worship not being churches or chapels of the Established Church, should, if the congregations desired, be certified as such to the Registrar-General, certification for public religious worship being a necessary preliminary to the registration of a building for the solemnization of marriages.

The number of places of meeting for religious worship on the official register on the 31st December, 1936, and the number of buildings registered for the solemnization of marriages are shown in Table CVII.

The Marriage Act, 1898, provided that under specified conditions marriages might be solemnized in registered buildings in the presence of duly authorised persons without the attendance of a Registrar of Marriages. The governing bodies of some of the registered buildings have availed themselves of this provision, and at the end of the year 1936, the number of such buildings which had been brought under the operation of the Act, and so remained, was 7,056 out of the total of 21,233. The numbers of these buildings, and the denominations to which they belonged, were as follows :—

4,617	Methodist Church.
1,004	Congregationalists.
734	Baptists.
169	Calvinistic Methodists.
532	Other Denominations and Unsectarian.
<hr/>	
7,056	All Denominations.
<hr/>	

Table CVII.

Denomination.	Buildings certified to the Registrar- General as meeting- places for Religious Worship.	Buildings registered for the Solemnization of Marriages.*	Increase or decrease (—) per cent. since 1921 in the number of buildings certified for Religious Worship.
Roman Catholics	2,036	1,880	30·5
Methodist Church†	13,693	8,711	— 2·0
Congregationalists	3,526	3,251	4·8
Baptists	3,434	3,097	7·7
Calvinistic Methodists	1,389	1,115	6·9
Presbyterians	466	462	4·0
Unitarians	185	196	0·5
New Church	60	63	9·1
Catholic Apostolic Church	61	50	— 12·9
Countess of Huntingdon's Connexion	45	40	— 4·3
Salvation Army	1,517	376	33·5
Society of Friends	421	†	— 2·3
Jews	330	†	27·4
Other Denominations	5,734	1,992	71·9
All Denominations	32,897	21,233	12·1

* Of these buildings nearly 1,000 were certified before 1852, as Places of Meeting for Religious Worship, to some other authority than the Registrar-General and therefore are not included in the preceding column.

† It is not necessary for buildings to be registered for the solemnization of Quaker or Jewish marriages. Under section 31 of the Births, Deaths, and Marriages Registration Act (1836), Registering Officers of the Society of Friends and Secretaries of Jewish Synagogues who have been certified to the Registrar-General, record the marriages in each case.

‡ Includes Wesleyan Methodist, Primitive Methodist and United Methodist Churches.

LIVE BIRTHS.

The live births registered during 1936 numbered 605,292, corresponding to a birth-rate of 14·8 per 1,000 of the population living. (Part II Tables B and C.)

The number of births is 6,536 more than those of 1935, an increase of 1·09 per cent.

The birth-rate in this country attained its highest values since the commencement of civil registration during the period 1865-1880, when it exceeded 35 per 1,000 population, and from that time it diminished by gradual and practically continuous stages to 23·8 in 1914. During the war of 1914-18, the rate decreased to a minimum of 17·7 in 1918. Following the return to this country of the combatants, the rate rose rapidly, reaching 25·5 in 1920. Since then it fell, with varying rapidity, to 14·4 in 1933, the lowest figure so far recorded. In 1934 the rate rose to 14·8, in 1935 it was 14·7 and the current rate is 14·8. Thus for three successive years the birth-rate has exceeded the minimum recorded in 1933 and, to that extent, it might be inferred that the post-war phase of the long continued decline has been arrested. Later returns tend to

shew that the present position is being maintained, but further time must elapse before it will be possible to see whether the period is merely an unusually extended halt preceding a still lower fall or whether it is to prove to be a more significant turning point in the history of the rate.

The present rate of recruitment is well below that which is necessary if diminution of the total population in the future is to be avoided.

The recent history of the birth-rate in this country may be compared with that of other countries of which particulars are at hand by reference to Table Q. The record extends over the period from 1911 to 1936 (for earlier years, *see* the Registrar-General's Annual Report for 1910) and covers therefore not only the years of the war period itself when the movements were quite abnormal, but a number of earlier and later years. Of the countries for which 1936 returns are available, England and Wales, Scotland, Northern Ireland, Denmark, Germany, Norway, Sweden, Australia, New Zealand, and South Africa, record increases in their birth-rates as compared with 1935, while one, the Irish Free State, remains the same, and the remaining 12 show decreases. Two only of these countries, Austria (13·1 per 1,000 population) and Sweden (14·2) have lower rates than that of England and Wales (14·8).

In all the countries listed except France, Spain, Portugal, and Japan the recent rates show a large fall in comparison with pre-war experience, a fall which in respect of England and Wales is the more serious since the position of this country in relation to that of others was already a low one before the war. The case of France is somewhat exceptional in that up to a few years ago the rates were not much lower than before the war. The rate, which was 18·0 in 1930, is now 15·0 and France now ranks above England and Wales, Austria, Norway and Sweden. The rise of the birth-rate in Germany from 14·7 in 1933 to 18·0 in 1934, 18·9 in 1935 and 19·0 in 1936, after a series of falls, is a feature of some interest; it will probably be associated with the administrative measures in the shape of special marriage loans, etc., introduced in recent years, partly, if not wholly, with the object of stimulating the birth rate. Apart from this the increases recorded are all small, and while they may suggest that minimum rates have now been passed, they may, with almost equal likelihood, indicate merely temporary breaks in the downward progress.

The crude birth-rate, or ratio of births to population of all ages, is a convenient form of statement when the object in view is to record the aggregate effect of all the various factors governing reproduction. It sums up the effects of all the influences governing the rate at which the community is reproducing itself and is, therefore, in conjunction with the corresponding form of mortality statement, the crude death-rate, the appropriate means of measuring natural increase. The number of births in the country,

however, depends mainly upon the number of married women at the reproductive ages, and as they form only one-eighth of the total population the variation of their numbers and ages over a period of time may be different from that of the whole population, in which case the crude birth-rates form but an imperfect measure of the changes in fertility, *i.e.* of the rate of reproduction in proportion to the opportunity of reproduction. In the absence of any knowledge of the constitution of the general population the crude rate is often used as an index of fertility, but always on the implied assumption of a fixed proportion of potential mothers, an assumption which may reasonably be made only in respect of short periods of adjacent years.

In order to exclude the effect of changing age-constitution of the population, and so obtain a better statement of variations of fertility, a method of standardization was introduced in the Statistical Review (Text) for 1922, and has been in use since then. A description of the method, together with a series of fertility rates calculated for England and Wales in 1921 and 1931 were given in the Registrar-General's Statistical Review for 1932 (Text, pp. 135, 136).

Summarized comparisons based on these fertility rates are given in the last column of Table CVIII for groups of three years about each census from 1871 to 1931, and for the individual years 1931 to 1936. The results are contrasted in that table with the more familiar comparisons given by the crude birth-rates whether calculated per 1,000 total population or per 1,000 married women between ages 15 and 45. Thus, in 1870-72, 2,148 legitimate births were recorded for every 1,000 that would have occurred under the standard fertility rates, the 1931 experience being in the aggregate less than half of that of 60 years before. From 1871 the rates diminished steadily and progressively to 1,592 in 1910-12. Since 1920-22 the even more rapid drop, commented upon in dealing with the crude rates, is shown by the further reductions in the index, from 1,460 to 1,000 in 1931. It will be observed that over the earlier years shown in the table the decrease in fertility was overstated by the crude rates, and that since 1920-22 the tendency has been in the other direction.

Illegitimate Births.—The live births registered during 1936 include 24,895 of illegitimate children, a decrease of 210 on the number in 1935, coincident with the increase of 6,536 in total births. Illegitimate births have thus decreased by 0·8 per cent., and legitimate births have increased by 1·2 per cent. As a result of these changes, the proportion of illegitimate to total births has fallen from 4·19 per cent. last year to 4·11 per cent., figures which compare with the minimum of 3·95 per cent. recorded for the period 1901-1905 and the maximum (excluding years prior to 1865) of 6·26 per cent. in 1918.

In addition to the crude rate comparison, an attempt has been made in Table CVIII to allow for the age distribution of the

potential mothers in respect of illegitimate as well as legitimate births in the manner referred to above. The rates for illegitimate fertility are of much less authority than the rates for legitimate fertility.

Table CVIII.—Birth-rates and Fertility, 1870–1936.

		Births per 1,000 Total Population.	Ratio to 1931.	Births per 1,000 Married Women, 15–45.	Ratio to 1931.	Ratio of Actual Births to those which would have occurred had the Standard age rates been operating.
Legitimate Live Births.						
1870–72	.. .. .	33·3	2,205	292·5	2,380	2,148
1880–82	.. .. .	32·3	2,139	286·0	2,327	2,117
1890–92	.. .. .	29·4	1,947	263·8	2,146	1,983
1900–02	.. .. .	27·5	1,821	235·5	1,916	1,797
1910–12	.. .. .	23·4	1,550	197·4	1,606	1,592
1920–22	.. .. .	21·7	1,437	178·9	1,456	1,460
1930–32	.. .. .	15·1	1,000	122·4	996	999
1931	.. .. .	15·1	1,000	122·7	1,000	1,000
1932	.. .. .	14·6	967	118·0	962	964
1933	.. .. .	13·8	914	110·4	900	905
1934	.. .. .	14·1	934	112·7	919	926
1935	.. .. .	14·1	934	111·9	912	923
1936	.. .. .	14·2	940	112·2	914	929
		Births per 1,000 Total Population.	Ratio to 1931.	Births per 1,000 Unmarried Women, 15–45.	Ratio to 1931.	Ratio of Actual Births to those which would have occurred had the Standard age rates been operating.
Illegitimate Live Births.						
1870–72	.. .. .	1·96	2,800	17·0	2,982	3,886
1880–82	.. .. .	1·65	2,357	14·1	2,474	2,375
1890–92	.. .. .	1·31	1,871	10·5	1,842	1,755
1900–02	.. .. .	1·12	1,600	8·5	1,491	1,419
1910–12	.. .. .	1·03	1,471	7·9	1,386	1,363
1920–22	.. .. .	1·04	1,486	8·1	1,421	1,430
1930–32	.. .. .	0·71	1,014	5·8	1,018	1,002
1931	.. .. .	0·70	1,000	5·7	1,000	1,000
1932	.. .. .	0·67	957	5·6	982	974
1933	.. .. .	0·63	900	5·4	947	936
1934	.. .. .	0·64	914	5·6	982	970
1935	.. .. .	0·62	886	5·4	947	938
1936	.. .. .	0·61	871	5·3	930	930
		Births per 1,000 Total Population.	Ratio to 1931.	Births per 1,000 total Women, 15–45.	Ratio to 1931.	Ratio of Actual Births to those which would have occurred had the Standard age rates been operating.
All Live Births.						
1870–72	.. .. .	35·3	2,234	153·7	2,387	2,179
1880–82	.. .. .	34·0	2,152	147·7	2,293	2,128
1890–92	.. .. .	30·7	1,943	129·7	2,014	1,972
1900–02	.. .. .	28·6	1,810	114·8	1,783	1,779
1910–12	.. .. .	24·5	1,551	98·3	1,526	1,581
1920–22	.. .. .	22·8	1,443	91·1	1,415	1,459
1930–32	.. .. .	15·8	1,000	64·3	998	1,000
1931	.. .. .	15·8	1,000	64·4	1,000	1,000
1932	.. .. .	15·3	968	62·6	972	964
1933	.. .. .	14·4	911	59·4	922	906
1934	.. .. .	14·8	937	61·5	955	928
1935	.. .. .	14·7	930	61·0	947	923
1936	.. .. .	14·8	937	61·2	950	929

Seasonal Distribution of Births.—The number of births registered in each quarter of the year and their frequency per 1,000 population are shown in Table D. Since 1923 the highest rate has occurred in every case in the second quarter. This contrasts with the experience of 1841 to 1890 when the highest rates usually occurred in the first quarter. The lowest rate is recorded consistently in the fourth quarter.

The seasonal distribution of births is thus consistent with the seasonal distribution of marriages, the frequency of which, as has already been noted (p. 171) is a maximum in the third and a minimum in the first quarter. In this connection, it is to be observed that, on the average, an interval of the order of one month elapses between the occurrence and the registration of a birth.

Birth-rates of Different Parts of the Country.—The birth-rates, total and illegitimate, of individual administrative areas tabulated in Table E are summarized in Table CIX for the geographical regions, and their sub-divisions.

The method for comparing the fertility of England and Wales in different years by the use of standard fertility rates applies equally well to the comparison of fertility in different sections of the population of which the sex, age and marital condition constitution is known, and the crude rate comparisons are supplemented in this table by the addition of a series of figures in which, as far as possible, variations in birth-rates due solely to differences in the age and marital condition proportions of the several populations, have been eliminated.

Table CIX shows for each of the specified divisions of the country the crude birth-rates of 1935 and 1936, the ratio of the crude rate to that of the country as a whole, and the corresponding ratio obtained by the use of the standard fertility rates of 1931.

The birth changes which have occurred between 1935 and 1936 in the geographical regions and types of area shown in the table are in general consonance with the movement in the country as a whole. Comparison of the crude rates in 1935 and 1936 for the several areas shows that in both years the highest for all births are found in North I and II, and the lowest in the South-West and South-East. In both years the lowest rate, 13·4 per 1,000, was found in the South-West, while the highest rate, that in North I, fell from 17·2 in 1935 to 16·9 in 1936. Crude rates for illegitimate births are highest in North II and Wales II, and lowest in Wales I.

The ratios shown in column (2) are based upon the crude rates and reflect therefore not only differences of fertility but also the varying incidence of sex, age and marital condition in the populations from which they arise. When the latter factors are eliminated as in column (4) of Table CIX, the process may result in altering materially the relative position of an area; for instance, the ratio for Wales II rises from 973 (crude) to 1,179 (standardized) while

Table CIX.—Birth-rates by Geographical Regions, 1935 and 1936.*(For the constitution of the several regions, see page 23).*

Region.	All Births.				Illegitimate Births.			
	Birth-rate per 1,000 Population.	Ratio to Rate for England and Wales, taken as 1,000 (Crude Rates).	Ratio of Actual Births per 1,000 of those which would have occurred had the Standard age rates been operating.	Ratio compared with that for England and Wales, taken as 1,000.	Birth-rate per 1,000 Population.	Ratio to Rate for England and Wales, taken as 1,000 (Crude Rates).	Ratio of Actual Births per 1,000 of those which would have occurred had the Standard age rates been operating.	Ratio compared with that for England and Wales, taken as 1,000.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1935.								
England and Wales ..	14.7	1,000	923	1,000	0.62	1,000	938	1,000
Regional Summary—								
South-East	13.9	946	871	944	0.63	1,016	902	962
Greater London ..	13.9	946	843	913	0.62	1,000	827	882
Remainder of South-East.	14.0	952	917	993	0.64	1,032	1,041	1,110
North	15.4	1,048	956	1,036	0.63	1,016	957	1,020
North I	17.2	1,170	1,041	1,128	0.62	1,000	1,053	1,123
North II	16.6	1,129	1,080	1,170	0.92	1,484	1,486	1,584
North III	14.8	1,007	886	960	0.60	968	929	990
North IV	14.8	1,007	940	1,018	0.59	952	844	900
Midland	15.3	1,041	930	1,008	0.55	887	843	899
Midland I	15.5	1,054	963	1,043	0.53	855	803	856
Midland II	14.7	1,000	871	944	0.59	952	921	982
East	14.8	1,007	981	1,063	0.75	1,210	1,292	1,377
South-West	13.4	912	905	980	0.58	935	974	1,038
Wales	15.4	1,048	995	1,078	0.63	1,016	1,074	1,145
Wales I	15.7	1,068	958	1,038	0.54	871	943	1,005
Wales II	14.7	1,000	1,121	1,215	0.88	1,419	1,394	1,486
Density Summary of all Areas outside Greater London—								
County Boroughs ..	15.4	1,048	952	1,031	0.66	1,065	970	1,034
Other Urban Districts	14.5	986	906	982	0.56	903	873	931
Rural Districts ..	14.8	1,007	999	1,082	0.64	1,032	1,163	1,240
1936.								
England and Wales ..	14.8	1,000	929	1,000	0.61	1,000	930	1,000
Regional Summary—								
South-East	14.2	959	887	955	0.64	1,049	918	987
Greater London ..	14.2	959	861	927	0.62	1,016	838	901
Remainder of South-East.	14.2	959	932	1,003	0.65	1,066	1,068	1,148
North	15.4	1,041	958	1,031	0.62	1,016	943	1,014
North I	16.9	1,142	1,017	1,095	0.59	967	1,003	1,078
North II	16.3	1,101	1,086	1,169	0.86	1,410	1,400	1,505
North III	14.8	1,000	891	959	0.59	967	912	981
North IV	15.0	1,014	949	1,022	0.59	967	856	920
Midland	15.5	1,047	945	1,017	0.53	869	824	886
Midland I	15.8	1,068	980	1,055	0.52	852	792	852
Midland II	14.9	1,007	880	947	0.56	918	888	955
East	14.5	980	964	1,038	0.73	1,197	1,264	1,359
South-West	13.4	905	907	976	0.58	951	976	1,049
Wales	15.1	1,020	966	1,040	0.58	951	978	1,052
Wales I	15.3	1,034	927	998	0.49	803	847	911
Wales II	14.4	973	1,095	1,179	0.82	1,344	1,296	1,394
Density Summary of all Areas outside Greater London—								
County Boroughs ..	15.5	1,047	957	1,030	0.65	1,066	960	1,032
Other Urban Districts	14.6	986	917	987	0.55	902	879	945
Rural Districts ..	14.8	1,000	987	1,062	0.61	1,000	1,104	1,187

Midland II falls from 1,007 to 947. If the areas be examined from the point of view of urbanization the change from the crude to the standardized comparison is also notable. By the crude rates the position of rural areas is distinctly understated, since from the point of view of fertility alone they are shown to be the most productive of all areas.

The extent of illegitimacy in different classes of area and parts of the country may be gathered from the right half of Table CIX. Except for a wider range of variation generally the distribution is not significantly different from that of all births. The highest rates occur as a rule in the rural districts. It will be seen that whereas for all births the standardized rural aggregate rate is 6·2 per cent. above the mean, for illegitimate only it is 18·7 per cent. above, and that both percentages are smaller than the corresponding figures for 1935 namely 8·2 and 24·0.

Sex Proportions at Birth.—Births of males in England and Wales in 1936 numbered 310,605 and those of females 294,687 ; the proportion of male to female births was 1,055, 1,037, and 1,054 to 1,000 for legitimate, illegitimate, and total births respectively. The corresponding proportions for total births in each year from 1895 onwards and in groups of years since the commencement of registration are shown in Table C (Part II). The extreme range since 1838 has been from 1,032 per 1,000 in 1898 to 1,060 in 1919. During this period the highest ratio recorded prior to the war was 1,054 in 1843 and 1844. The current ratio of 1,054 shows a decrease on that of 1934 (1,055) and that of 1935 (1,056), but is high as compared with the ratios of the years 1920–1933, and equals the highest of pre-war years.

The extent to which different classes of area or portions of the country contribute to the preponderance of male births is shown in Table CX in which figures are collected for the six years 1931 to 1936.

The range for the several regions varies from 1,036 to 1,066 in 1932 and 1936, a difference of 30, or 2·9 per cent. of the average ; to 1,038 to 1,103 in 1933, a difference of 65 or 6·2 per cent. of the average. Since the smallest number of births in a region is of the order of 10,000 (in Wales II), it is difficult to ascribe these variations to chance causes. The inconsistency of some of these ratios is illustrated by Wales II, which was the highest in 1932, 1933 and 1935, and the lowest in 1934, and by the South-West which fell from 1,073 in 1931 to 1,057 in 1932 and to 1,046 in 1933 and rose to 1,072 in 1935, to fall again to 1,046 in 1936. A similar inconsistency is revealed when the figures are analysed according to degree of urbanization. The ratio for the county boroughs was highest in 1934, lowest in 1931, 1932, 1935 and 1936 ; for the urban districts, highest in 1931, 1933 and 1935, lowest in 1934 ; for the rural districts, highest in 1932, lowest in 1933.

Table CX.—Male Births per 1,000 Female Births, 1931–1936.

	1931.	1932.	1933.	1934.	1935.	1936.
England and Wales	1,049	1,050	1,046	1,055	1,056	1,054
Regional Summary—						
South-East	1,047	1,046	1,044	1,058	1,056	1,054
Greater London	1,048	1,052	1,047	1,061	1,057	1,052
Remainder of South-East	1,046	1,036	1,039	1,053	1,054	1,056
North	1,045	1,050	1,048	1,052	1,055	1,057
North I	1,050	1,054	1,065	1,058	1,043	1,055
North II	1,072	1,036	1,055	1,044	1,069	1,052
North III	1,041	1,046	1,050	1,052	1,064	1,043
North IV	1,040	1,054	1,039	1,052	1,053	1,066
Midland	1,054	1,053	1,042	1,061	1,050	1,055
Midland I	1,052	1,048	1,040	1,063	1,046	1,062
Midland II	1,058	1,064	1,047	1,059	1,057	1,039
East	1,029	1,040	1,038	1,056	1,057	1,036
South-West	1,073	1,057	1,046	1,047	1,072	1,046
Wales	1,056	1,057	1,059	1,051	1,069	1,059
Wales I	1,060	1,054	1,044	1,058	1,065	1,064
Wales II	1,043	1,066	1,103	1,031	1,081	1,044
Density Summary of all Areas outside Greater London—						
County Boroughs	1,043	1,047	1,044	1,061	1,050	1,051
Other Urban Districts ..	1,057	1,050	1,052	1,045	1,065	1,057
Rural Districts	1,048	1,052	1,039	1,054	1,052	1,058

STILLBIRTHS.

Stillbirths registered in England and Wales as a whole are shown for each year in Part II of the Statistical Review, Table B, and for each quarter in Table D. The numbers occurring in metropolitan and county boroughs, and in the aggregates of urban and of rural districts in administrative counties are shown in Part I, Table 18, to which is prefixed a summary for the several larger regions into which the country is divided.

In England and Wales the stillbirths registered during 1936 numbered 25,045 in all, 13,639 being males and 11,406 females; the numbers representing 40, 42 and 37 per 1,000 total births or 41, 44 and 39 per 1,000 live births respectively. The total compares with the figure of 25,435 recorded last year.

Prior to 1st July, 1927, the date on which stillbirth registration became operative in this country under the Births and Deaths Registration Act, 1926, the only record of stillbirths in England and Wales was that obtained from notifications received by Medical Officers of Health. These were published in the successive reports,

from 1919 onwards, of the Chief Medical Officer to the Ministry of Health and were summarised in the 1927 Statistical Review (Text p. 128). As the Act of 1926 did not require the registration of stillbirths in Scotland and Northern Ireland, there are no statistics for those countries with which the figures for England and Wales may be compared.

The distribution of the total according to sex, legitimacy and geographical incidence in 1935 and 1936 is summarised in rate form in Table CXI: in this Table columns have been included from which comparisons may be made between the incidence of stillbirths on the one hand and that of live births or of infant mortality on the other. Wherever the numbers are large enough to form a satisfactory basis of fact, the frequency of stillbirth amongst males is shown to be definitely greater than it is amongst females. The male excess for legitimate births is the same as that of last year, and it is maintained with considerable uniformity throughout the several sections distinguished. For illegitimate births, also, male excess is usually found, but exceptions are recorded in 1936 in North II, Midland I, South-West and Wales I and II. As between legitimate and illegitimate births, the latter exhibit the higher rates in all sections excepting the males in Wales I, where the rates are equal, the amount of the excess being on a somewhat larger scale than that indicated in the comparison between the sexes.

As regards areal comparison, Wales returns legitimate stillbirth frequencies markedly higher than those of any English sections, which among themselves decrease generally from the North, where the rate is 12 per cent. in excess of the general average, to the South-East where it is 17 per cent. below. The contrasts are not so consistent among the illegitimate frequencies.

The relative positions in the various portions of the country and the close association in this respect between stillbirths and infantile deaths are brought out in the columns of the table in which the stillbirth rate and infantile mortality rate of the year are expressed in relation to that of the country at large, the latter being taken as 1,000 in each case. The similarity of incidence is marked in comparisons made with the mortality of the full first year of life, but the parallelism is found in certain areas to be even closer when the comparison is restricted to the deaths occurring within the four weeks immediately following birth.

Some idea of the local variation of stillbirths may be obtained from Table CXII, which shows the boroughs and the county urban and rural aggregates exhibiting the highest and lowest rates per 1,000 total births in 1936. Areas in which fewer than 20 stillbirths were registered have been omitted. Material for a comparison of live births with stillbirths over the years 1928-1936 is contained in Table CXIII.

Table CXI.—Stillbirths, 1935 and 1936.

Area.	Stillbirths per 1,000 total births.					Stillbirths per 1,000 total births and Live Births per 1,000 population expressed in relation to correspond- ing rate for England and Wales taken as 1,000.				Stillbirths per 1,000 total births and Infant Mortality per 1,000 live births expressed in relation to corresponding rate for England and Wales taken as 1,000.		
	Total.	Legitimate.		Illegitimate.		Stillbirths.		Live Births.		Still- births.	Deaths under 4 weeks.	Deaths under 1 year.
		Males.	Fe- males.	Males.	Fe- males.	Legiti- mate.	Illegi- timate.	Legiti- mate.	Illegi- timate.			
1935.												
England and Wales ..	40·7	43	38	50	49	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Regional Summary—												
South-East ..	33·0	34	31	44	39	807	848	943	1,016	811	812	833
Greater London ..	31·9	33	30	47	37	777	846	943	1,000	784	814	898
Remainder of South- East.	34·6	35	33	40	43	849	850	943	1,032	850	808	734
North ..	45·4	48	42	55	55	1,114	1,122	1,050	1,016	1,115	1,155	1,187
North I ..	42·3	45	39	44	58	1,040	1,030	1,177	1,000	1,039	1,312	1,330
North II ..	41·6	41	42	52	37	1,025	919	1,113	1,484	1,022	1,126	1,201
North III ..	45·8	48	42	61	62	1,116	1,248	1,007	968	1,125	1,109	1,025
North IV ..	47·5	51	43	57	56	1,166	1,152	1,007	952	1,167	1,121	1,215
Midland ..	41·5	43	39	46	49	1,020	965	1,043	887	1,020	1,058	1,029
Midland I ..	41·6	44	39	49	52	1,022	1,022	1,064	855	1,022	1,041	1,027
Midland II ..	41·2	43	39	41	44	1,017	868	1,007	952	1,012	1,091	1,032
East ..	38·6	41	35	52	53	936	1,069	993	1,210	948	851	776
South-West ..	40·1	42	37	48	47	985	970	908	935	985	894	757
Wales ..	54·6	58	51	58	64	1,347	1,238	1,050	1,016	1,342	1,159	1,111
Wales I ..	54·7	57	51	57	66	1,349	1,240	1,078	871	1,344	1,146	1,114
Wales II ..	54·3	59	48	61	61	1,334	1,232	979	1,419	1,334	1,197	1,103
Density Summary of all Areas outside Greater London—												
County Boroughs..	42·9	46	39	45	52	1,054	980	1,050	1,065	1,054	1,095	1,162
Other Urban Dis- tricts.	43·5	44	42	55	59	1,064	1,165	993	903	1,069	1,037	974
Rural Districts ..	42·0	44	39	53	42	1,032	974	1,007	1,032	1,032	972	859
1936.												
England and Wales ..	39·7	42	37	54	48	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Regional Summary—												
South-East ..	33·0	34	31	48	36	830	829	951	1,049	831	823	886
Greater London ..	32·1	33	30	50	34	804	823	951	1,016	809	814	965
Remainder of South- East.	34·4	36	32	45	40	865	837	951	1,066	866	838	765
North ..	44·6	46	42	58	52	1,125	1,086	1,042	1,016	1,123	1,137	1,145
North I ..	43·0	44	40	73	54	1,074	1,250	1,148	967	1,083	1,271	1,265
North II ..	40·8	43	38	45	48	1,031	910	1,092	1,410	1,028	1,004	1,049
North III ..	44·2	46	42	52	47	1,120	974	1,007	967	1,113	1,119	1,112
North IV ..	46·4	48	44	61	55	1,168	1,141	1,014	967	1,169	1,123	1,136
Midland ..	38·8	41	35	57	51	972	1,065	1,056	869	977	1,048	1,008
Midland I ..	38·4	41	35	53	53	962	1,037	1,077	852	967	1,034	1,003
Midland II ..	39·5	42	36	64	49	990	1,112	1,007	918	995	1,075	1,019
East ..	38·5	41	33	60	59	952	1,163	972	1,197	970	974	840
South-West ..	37·6	40	34	44	62	939	1,039	901	951	947	894	814
Wales ..	54·0	57	50	57	66	1,366	1,218	1,021	951	1,360	1,161	1,056
Wales I ..	54·7	58	51	58	66	1,387	1,220	1,042	803	1,378	1,153	1,059
Wales II ..	52·2	55	48	56	67	1,313	1,216	951	1,344	1,315	1,185	1,046
Density Summary of all Areas outside Greater London—												
County Boroughs	41·2	43	38	56	48	1,036	1,024	1,042	1,066	1,038	1,087	1,131
Other Urban Dis- tricts.	42·5	44	40	55	50	1,071	1,033	986	902	1,071	1,015	937
Rural Districts ..	41·0	43	37	53	61	1,025	1,114	1,000	1,000	1,033	1,025	903

Table CXII.—Stillbirths, 1936. Range of local variation.
Stillbirths per 1,000 total births.

Metropolitan Boroughs.		County Boroughs.		Urban Aggregates (Excluding County Boroughs).		Rural Aggregates.	
<i>Highest.</i>							
Hampstead ...	46	Halifax ...	64	Flint ...	71	Cardigan ...	65
St. Pancras ...	42	Merthyr Tydfil ...	63	Carmarthen ...	60	Monmouth ...	64
Bethnal Green ...	40	Bolton ...	58	Glamorgan ...	60	Caernarvon ...	59
Paddington ...	37	Stockport ...	55	Pembroke ...	57	Pembroke... ..	58
Finsbury ...	36	Burnley ...	54	Monmouth ...	56	Brecon ...	56
Stoke Newington ...	36	Dewsbury ...	54			Denbigh ...	56
Lewisham ...	36	Oldham ...	54				
<i>Lowest.</i>							
Bermondsey ...	28	East Ham... ..	32	Essex ...	32	Bedford ...	31
Battersea ...	27	Hastings ...	31	Surrey ...	32	Oxford ...	31
Southwark ...	27	Walsall ...	32	Middlesex ...	32	Surrey ...	31
Woolwich ...	27	Reading ...	30	Peterborough, ...		Dorset ...	27
Fulham ...	25	Southend-on-Sea ...	30	Soke of ...	31	Bucks ...	26
		Smethwick ...	28	Hertford ...	30		
		Oxford ...	24	Northants ...	30		
				Cambridge ...	24		

Table CXIII.—Comparison of Live Births and Stillbirths, 1928–1936.

Year.	Stillbirths per 1,000—		Male births per 1,000 female births.				Illegitimate births per 1,000—			
	Popula- tion of all ages.	Total births (live and still).	Live births.		Stillbirths.		Live births.		Stillbirths.	
			Total.	Illeg.	Total.	Illeg.	M.	F.	M.	F.
Col. (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1928 ..	0·70	40·1	1,044	1,041	1,210	1,297	44·9	45·1	64·8	60·5
1929 ..	0·68	40·0	1,043	1,021	1,259	1,311	45·1	46·0	62·9	60·4
1930 ..	0·69	40·8	1,044	1,049	1,235	1,233	45·9	45·6	61·0	61·1
1931 ..	0·67	40·9	1,049	1,059	1,248	1,250	44·6	44·2	61·8	61·7
1932 ..	0·66	41·3	1,050	1,042	1,216	1,197	43·8	44·2	56·5	57·3
1933 ..	0·62	41·4	1,046	1,021	1,180	1,137	43·3	44·3	56·1	58·2
1934 ..	0·62	40·5	1,055	1,049	1,188	1,102	43·0	43·3	56·2	60·7
1935 ..	0·63	40·7	1,056	1,046	1,184	1,065	41·7	42·1	48·6	54·0
1936 ...	0·61	39·7	1,054	1,037	1,196	1,171	40·8	41·5	52·8	53·9

NATURAL INCREASE.

The excess of live births over deaths registered in England and Wales during the years 1928 to 1936 was:—

1928...	...	199,878	1933...	...	83,948
1929...	...	111,181	1934...	...	120,832
1930...	...	193,384	1935...	...	121,355
1931...	...	140,451	1936...	...	109,528
1932...	...	129,843			

From the comparable series of rates per 1,000 living popula- tion given in Table R, it will be observed that, though there is rather greater irregularity in the successive rates of natural increase, they have, over the range of years there given, followed on the

whole a similar course to those followed by both birth and death-rates, and have declined with advancing years. The present rate of natural increase is 2·7 per 1,000 population. Lower rates were recorded in 1918 (0·4) and 1933 (2·1), but, with these exceptions, the rate in 1936 is the lowest so far recorded. It compares with a figure of approximately 10 per 1,000 in the years immediately preceding the war and over 14 per 1,000 in the period 1876–1880 when the birth-rate was at about its maximum. Stated in these terms the curve of natural increase expresses no more than that the crude birth-rate has hitherto been greater than the crude death-rate, and that the decline in the former has advanced at a greater rate than the fall in the latter. From the general continuity of the series it may be inferred that the number of births will continue to exceed the deaths for some years, and that, apart from the results of migration, the population will continue to increase during such period though, naturally, at a slower pace.

Table CXIV shows for 1931–36 the rate of natural increase in various sections of the country, representing the combined effect

Table CXIV.—Natural Increase per 1,000 living, 1931–1936.

			1931.	1932.	1933.	1934.	1935.	1936.
			—	—	—	—	—	—
England and Wales	..	..	3·5	3·3	2·1	3·0	3·0	2·7
Regional Summary—								
South-East	..	..	3·4	3·0	2·0	2·6	3·2	2·9
Greater London	..	..	3·9	3·5	2·3	2·9	3·6	3·2
Remainder of South-East	..	..	2·9	2·3	1·7	2·2	2·6	2·4
North	..	..	3·2	3·4	1·9	3·2	2·7	2·5
North I	..	..	6·1	6·4	4·9	5·2	5·0	4·5
North II	..	..	4·2	4·5	3·0	4·1	3·9	3·6
North III	..	..	2·7	2·7	1·6	2·9	2·4	1·9
North IV	..	..	2·3	2·5	0·8	2·4	1·8	1·8
Midland	..	..	4·6	4·1	2·9	3·9	3·9	3·7
Midland I	..	..	4·7	4·2	3·0	4·0	4·0	4·0
Midland II	..	..	4·6	4·2	2·8	3·7	3·4	3·3
East	..	..	3·4	2·9	1·9	3·0	2·9	2·3
South-West	..	..	1·0	0·8	0·4	0·8	0·9	0·4
Wales	..	..	3·4	3·2	2·3	3·2	2·7	2·1
Wales I	..	..	4·5	4·2	3·0	4·2	3·6	2·9
Wales II	..	..	0·7	0·8	0·1	0·4	0·4	0·1
Density Summary of All Areas outside Greater London—								
County Boroughs	..	..	3·4	3·5	1·9	3·2	2·9	2·7
Other Urban Districts	..	..	3·1	2·9	1·7	2·7	2·6	2·4
Rural Districts	..	..	3·7	3·4	2·6	3·2	3·0	2·6

of the several sectional birth and death rates. In none of the areas is the rate of increase greater in 1936 than in 1935, and with two exceptions (North IV and Midland I) the rates are lower. Attention may be drawn to the large differences between the different sections

of the regions, namely, North I (Durham and Northumberland), and North IV (Cheshire and Lancashire), and between Wales I (Brecknockshire, Carmarthenshire, Glamorganshire and Monmouthshire), and Wales II (the remainder of Wales) where increase has been changed to decrease.

Comparative figures for natural increase and migration during the period 1931–36 are shown in Table E (Part II, p. 10) for the large geographical regions. The natural increase ranges from 27·5 per 1,000 population in North I (Durham and Northumberland) to 1·8 in Wales II (North Central and Western Wales). The Northern, Welsh and Eastern regions show an outward balance of migration which varies from 56·3 per 1,000 in Wales I and 38·6 in North I to 10·0 in North II, 4·4 in North IV and 2·2 in the East. An actual decrease of estimated total population is recorded for North I and for the two Welsh regions. The largest increases in population occur in the area of the South-East region outside of Greater London, 69·4 per 1,000, followed by Greater London 42·5, and Midland I 26·0. The analysis according to degree of urbanization, shows a very small decrease, 1·4 per 1,000, in the total population of the county boroughs—associated with an outward migration of 16·5 per 1,000. The aggregate population of the rural districts shows an increase of 33·8 per 1,000, made up of a natural increase of 17·0 and an inward migration of 16·8.

Table S, which provides an analysis of migration from 1911 onwards, shows that the balance of passenger movement, which for many years had been in the outward direction, has been reversed during the last seven years. The net passenger movement into the United Kingdom was 70,003 in 1936. This contrasts with about 48,000 in 1933, 77,000 in 1932 and 91,000 in 1931, and with an outward balance of 100,000 so recently as 1926.

The effect on the age distribution of the population since 1901, due mainly to the continuous reduction in birth and death rates, is shown in Table I (p. 3). The main features are the proportional reduction in the number of young children, 0·5 (from 11·4 per cent. in 1901 to 6·9 in 1936) and in children of school age 5–15 (from 21·0 to 15·4 per cent.); the increase in old and elderly people (e.g. at 65–75, from 3·3 to 6·0 per cent. and at 75–85, from 1·2 to 2·1 per cent.); and the substantial constancy in the numbers of those aged 25–35 (16·2 per cent. in 1901, 16·7 in 1936). If the present trends in birth and death rates persist the proportions of infants and children in the population will continue to decrease and those of old people to increase; and as time goes on, the decrease will extend gradually to the age-groups over 25.

GREAT BRITAIN, NORTHERN IRELAND AND IRISH FREE STATE.

Population.—The first complete census of the United Kingdom was taken in 1821, when the population numbered 20,893,584

**Table CXV.—Great Britain and Ireland. Vital Statistics.
1921–30 and 1931–6.**

				Great Britain and Ireland.	England and Wales.	Scot- land.	Northern Ireland.	Irish Free State.
<i>Estimated Population in the middle of the year 1936 (in thousands).</i>								
Males	..	..	..	24,125	19,591	2,392	623	1,519
Females	..	..	..	25,925	21,248	2,574	656	1,447
Persons	..	..	..	50,051	40,839	4,966	1,280	2,966
<i>Marriages.</i>								
1936	..	..	..	416,465	354,644	37,914	9,144	14,763
Persons married per 1,000 living :—								
1921–1930	..	..	..	14.9	15.5	13.8	12.1	9.5
1931	..	..	..	14.9	15.6	13.5	11.8	8.9
1932	..	..	..	14.6	15.3	13.6	11.0	8.8
1933	..	..	..	15.1	15.8	13.9	12.0	9.3
1934	..	..	..	16.2	16.9	15.0	12.9	9.5
1935	..	..	..	16.4	17.2	15.3	13.7	9.6
1936	..	..	..	16.6	17.4	15.3	14.3	10.0
<i>Births.</i>								
1936	..	..	..	778,244	605,292	88,928	25,909	58,115
Per 1,000 living :—								
1921 1930	..	..	..	18.8	18.3	21.5	22.1	20.2
1931	..	..	..	16.5	15.8	19.0	20.5	19.3
1932	..	..	..	15.9	15.3	18.6	19.9	18.9
1933	..	..	..	15.1	14.4	17.6	19.4	19.2
1934	..	..	..	15.5	14.8	18.0	19.8	19.2
1935	..	..	..	15.4	14.7	17.8	19.2	19.6
1936	..	..	..	15.5	14.8	17.9	20.2	19.6
<i>Deaths.</i>								
1936	..	..	..	623,528	495,764	66,749	18,429	42,586
Per 1,000 living :—								
1921–1930	..	..	..	12.5	12.1	13.7	15.1	14.5
1931	..	..	..	12.6	12.3	13.3	14.4	14.5
1932	..	..	..	12.4	12.0	13.5	14.1	14.5
1933	..	..	..	12.5	12.3	13.2	14.3	13.5
1934	..	..	..	12.0	11.8	12.9	13.7	13.0
1935	..	..	..	12.1	11.7	13.2	14.4	14.0
1936	..	..	..	12.5	12.1	13.4	14.4	14.4
<i>Deaths of Infants under 1 year.</i>								
1936	..	..	..	49,041	35,425	7,315	1,992	4,309
Per 1,000 live births :—								
1921–1930	..	..	..	74	72	89	81	70
1931	..	..	..	69	66	82	73	69
1932	..	..	..	69	65	86	83	72
1933	..	..	..	66	64	81	80	65
1934	..	..	..	62	59	78	70	63
1935	..	..	..	61	57	77	86	67
1936	..	..	..	63	59	82	77	74

persons; during the 100 years 1821–1921 this number increased by about 126 per cent., the sum of the census figures for Great Britain and of the estimated populations of Northern Ireland and the Irish Free State in June, 1921, amounting to 47,123,196. Up to the date when the 1931 Census was taken there was a further increase of 4 per cent. The populations of the several portions of the United Kingdom for each census year from 1821 and for individual years from 1897 are set out in Table A (Part II).

Marriages.—The marriages during the year 1936 numbered 416,465 corresponding to a rate of 16·6 persons married per 1,000 of the total population. This rate was 0·2 per 1,000 above the corresponding rate in 1935 and 1·7 above the average rate in the ten years 1921–1930.

Births.—The live births registered in the year 1936 numbered 778,244, and were in the proportion of 15·5 per 1,000 of the total population. This rate was 0·1 above the corresponding rate in 1935 and 3·3 per 1,000 below the average in the ten years 1921–1930.

Deaths.—The deaths registered in the year 1936 numbered 623,528, and were in the proportion of 12·5 per 1,000 of the total population. This rate was 0·4 per 1,000 above the corresponding rate in 1935, and the same as the average in the ten years 1921–1930.

Infant Mortality.—The deaths of infants under one year of age during the year 1936 numbered 49,041, representing a rate of 63 per 1,000 live births. This rate was 2 per 1,000 above that recorded in 1935 and 11 per 1,000 below the average in the ten years 1921–1930.

BIRTHS AND DEATHS AT SEA.

Marine Register Book.—In accordance with the Births and Deaths Registration Act of 1874 and the Merchant Shipping Act of 1894, Commanding Officers of ships trading to or from British ports are required to transmit returns of all births and deaths occurring on board their ships to the Registrar-General of Shipping and Seamen, who furnishes certified copies of such returns to the Registrars-General of Births and Deaths for England, Scotland, Northern Ireland and the Irish Free State. Similar returns are furnished to the Registrars-General of Births and Deaths by Officers in command of His Majesty's ships. The returns of births and deaths at sea received by the Registrar-General constitute the "Marine Register Book." During the year 1936 this register was increased by the addition of 65 entries of birth and 1131 entries of death.

REGISTRATIONS OF BIRTHS, DEATHS AND MARRIAGES.

Progress of Registration.—The names in the alphabetical indexes of births, deaths and marriages recorded in the national registers of England and Wales were increased during the year 1936 by 1,810,344, this addition raising the total of names in the indexes, which at the end of 1936 embraced a period of $99\frac{1}{2}$ years, to 168,466,713 (Table T).

Searches and Certificates.—Besides the certified copies of the registered births, deaths and marriages kept in England and Wales pursuant to the Registration Acts, a large number of other registers and records are deposited in this Office under statute or other arrangement. A revised list of these various registers and records will be found on pages 149–155 of the Review for 1925. Searches may be made in any of these registers, and certificates obtained on payment of the prescribed fees.

Table CXVI affords an indication of the extent to which the copies of the records kept in this Office have been utilized by the public for legal evidence of births, deaths and marriages since 1866.

The 473,616 gratuitous searches during 1936 comprise 39,594 searches made for the purpose of verifying the ages of persons aged 70 and upwards claiming old age (non-contributory) pensions and 226,433 for persons claiming pensions under the Widows', Orphans' and Old Age Contributory Pensions Acts, 1925 and 1929; 86,184 for verification purposes in connection with claims to widows' and orphans' pensions under those Acts; 60,008 to assist dependents of men of H.M. Forces to produce evidence of marriage and of the births of children in connection with claims to naval and military pensions, separation allowances, etc., and to verify the ages of certain classes of youths and men in connection with service in the Army, Navy and Air Force; 42,824 for verification of age, etc., in connection with National Health and Unemployment Insurance; and 18,573 for other public purposes.

Offences against the Registration Acts.—In 1936 nine persons, on prosecution by order of the Registrar-General, were convicted of offences in connection with registration. The offences for which convictions were obtained were as under :—

(a) For failing to register a birth	8
(b) For failing to deliver to a Superintendent Registrar Quarterly Certified copies of Marriage Entries ..	1

Proceedings were taken, also, by the Director of Public Prosecutions or by the police under the Perjury Act, 1911, in a number of cases where false information had been given (1) by an informant in regard to the particulars required to be registered in an entry of birth, stillbirth, marriage or death or (2) for the purpose of procuring marriage.

Table CXVI.

Years.	Total Searches.	Gratuitous Searches.	Searches paid for by Fees.	Certificates Issued.	Amount Received.		
					£	s.	d.
1866 (52 weeks) ..	12,135	—	12,135	10,017	1,860	15	6
1875 (52 weeks) ..	26,356	—	26,356	20,282	3,879	15	6
1885 (52 weeks) ..	36,450	—	36,450	27,682	5,317	13	6
1895 (52 weeks) ..	53,289	—	53,289	35,727	7,200	12	6
1905 (52 weeks) ..	65,142	—	65,142	50,310	9,611	9	0
1906 (52 weeks) ..	64,340	—	64,340	49,429	9,458	6	0
1907 (52 weeks) ..	69,249	—	69,249	53,058	10,194	9	0
1908 (53 weeks) ..	72,370	—	72,370	54,870	10,550	8	0
1909 (52 weeks) ..	132,169	58,626*	73,543	54,674	10,568	8	0
1910 (52 weeks) ..	126,716	51,347	75,369	57,019	10,939	5	6
1911 (52 weeks) ..	140,496	65,491	75,005	56,347	10,875	6	0
1912 (52 weeks) ..	149,752	69,151	80,601	61,143	11,752	6	0
1913 (52 weeks) ..	150,540	71,225†	79,315	60,356	11,613	19	0
1914 (53 weeks) ..	188,040	104,593	83,447	65,817	12,482	11	6
1915 (52 weeks) ..	202,939	118,788	84,151	69,746	13,007	10	0
1916 (52 weeks) ..	303,334	197,669	105,665	88,265	16,379	17	0
1917 (52 weeks) ..	272,199	177,403	94,796	80,374	14,859	14	0
1918 (52 weeks) ..	255,462	146,504	108,958	90,898	16,889	0	0
1919 (52 weeks) ..	301,913	170,670	131,243	107,067	20,017	14	6
1920 (53 weeks) ..	284,194	149,447	134,747	108,684	20,415	0	0
1921 (52 weeks) ..	258,461	131,167	127,294	99,911	18,949	10	6
1922 (52 weeks) ..	263,047	143,088	119,959	90,400	19,028	12	6
1923 (52 weeks) ..	269,822	144,118	125,704	93,701	20,875	16	0
1924 (52 weeks) ..	337,521	178,990	158,531	121,890	27,109	15	0
1925 (53 weeks) ..	488,781	339,790	148,991	115,378	25,610	2	6
1926 (52 weeks) ..	541,916	407,687	134,229	105,560	23,305	6	6
1927 (52 weeks) ..	1,002,345	854,084	148,261	115,009	25,733	16	0
1928 (52 weeks) ..	600,678	452,953	147,725	114,731	25,678	17	0
1929 (52 weeks) ..	550,742	402,853	147,889	116,768	25,903	18	0
1930 (52 weeks) ..	1,207,344	1,053,047	154,297	121,549	26,964	12	0
1931 (53 weeks) ..	651,414	509,267	142,147	109,163	24,323	1	6
1932 (52 weeks) ..	598,624	464,985	133,639	104,420	23,086	13	0
1933 (52 weeks) ..	591,668	455,664	136,004	108,050	23,790	11	0
1934 (52 weeks) ..	562,849	424,943	137,906	111,265	24,378	14	6
1935 (52 weeks) ..	591,056	443,783	147,273	119,351	26,221	9	6
1936 (53 weeks) ..	630,842	473,616	157,226	128,572	28,219	19	3

* Including some searches made in 1908.

† In addition, there were 91,917 gratuitous searches made for National Insurance Audit purposes.

RE-REGISTRATION OF BIRTHS UNDER THE LEGITIMACY ACT, 1926.

Under the Legitimacy Act, 1926, an illegitimate child of parents who married after the birth of the child was, subject to certain conditions, legitimated; and the Act contained incidental provision

to enable the births of such children to be re-registered. During the year 1936 authority was issued for the re-registration of the births of 2,986 children, being 30 more than the preceding year.

The number of authorities issued during each quarter is as follows :—

Quarter.	1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.
March ..	1,265	1,401	1,075	996	981	854	752	722	774	742
June ..	1,256	1,170	1,105	1,001	908	762	724	777	790	843
Sept. ..	1,381	1,242	933	1,006	797	709	718	798	701	685
Dec. ..	1,593	1,070	933	986	825	819	774	798	691	716
Totals	5,495	4,883	4,046	3,989	3,511	3,144	2,968	3,095	2,956	2,986

As the numbers of re-registrations during the last five years, 1932-36, depart little from an average of about 3,000, it would appear that the numbers have now reached a comparatively steady state, and that the accumulation of cases reflected in the figures for the earlier years 1927-31 has been disposed of.

ADOPTION OF CHILDREN UNDER THE ADOPTION OF CHILDREN ACT, 1926.

The Adoption of Children Act, 1926, provided for the legal adoption of children by Order of the Court, and established a system of registration of such adoptions in an Adoption Register to be kept by the Registrar-General. The number of children whose adoption was registered during 1936 is 5,185. Table CXVII furnishes an

Table CXVII.

Year.	Number of Adoption Orders dealt with.				Corresponding number of children, <i>i.e.</i> , Entries made in Adopted Children Register.				
	Total.	High Court.	County Court.	Court of Summary Jurisdiction.	Year's Total.	March Quarter.	June Quarter.	September Quarter.	December Quarter.
1927 ..	2,943	133	184	2,626	2,967	329	990	774	874
1928 ..	3,278	124	236	2,918	3,303	851	844	705	903
1929 ..	3,294	72	224	2,998	3,307	722	787	857	941
1930 ..	4,511	74	317	4,120	4,517	1,084	1,196	983	1,254
1931 ..	4,119	68	274	3,777	4,127	873	1,049	1,046	1,159
1932 ..	4,465	38	264	4,163	4,467	1,073	1,178	1,000	1,216
1933 ..	4,524	61	262	4,201	4,528	1,029	1,258	1,004	1,237
1934 ..	4,756	45	290	4,421	4,758	1,063	1,265	1,075	1,355
1935 ..	4,844	64	342	4,438	4,852	1,174	1,261	1,073	1,344
1936 ..	5,180	62	372	4,746	5,185	1,215	1,230	1,320	1,420

analysis of the Adoption Orders made by reference to the several classes of Courts and the quarterly distribution of the total figure.

It will be observed that the numbers of adoption orders show steady increase since 1931, that the majority of the orders are made by courts of summary jurisdiction (92 per cent. in 1936) and that there is a general preference for the fourth quarter (the only exception being in 1933.)

PARLIAMENTARY AND LOCAL GOVERNMENT ELECTORS.

The returns of Parliamentary and Local Government Electors published in Tables U and V summarize the Register of Electors compiled under the Representation of the People (Equal Franchise) Act of 1928 in respect of the qualifying period of three months ending on the 1st June, 1936.

The particulars have been taken from statements furnished to the Registrar-General by the Registration Officers of the several areas, or in the case of a University forming the whole or part of a University constituency, by the Chancellor, Registrar or other officer dealing with Parliamentary registration.

Registration Officers were instructed that the return of Parliamentary Electors should be the net total of individual Parliamentary Electors in each constituency, all duplicate entries being omitted from the count. In the case of Local Government Electors the number of names on the register was to be given. The instructions further directed that the names of "out voters" (that is, persons whose names appear twice in the Register, by reason of a claim under Rule 24 of the First Schedule to the 1918 Act) should be counted once only in respect of that qualification.

Table U refers to Parliamentary electors, and shows for each Parliamentary constituency in England and Wales, including the University constituencies, the numbers of males and females on the Register, and also the numbers registered in respect of business premises qualifications and the numbers on the absent voters' list.

Table V refers to Local Government electors, and shows the numbers of each sex registered in respect of every local government area, *i.e.*, county borough, metropolitan borough, municipal borough, urban district and rural district in England and Wales.

The figures for the whole country are summarized in Table CXVIII and are shown in conjunction with the figures of previous Registers made since the passing of the 1918 Act.

It will be observed that the sex distribution of the electorate which, in respect of the Parliamentary Register, was formerly in the proportion of about 1·3 men to each woman, was completely altered by The Representation of the People (Equal Franchise) Act of 1928. That Act, which placed women on the same footing as men in regard to the franchise, added about 4½ million women to the Parliamentary electorate and nearly 1¼ million to the Local

Government electorate, and as a consequence women now outnumber men by approximately 12 per cent. in the case of each. The somewhat abnormal increase in the male electorate between 1928 and 1929—an interval of six months, it should be noted, in place of the usual 12 months period—cannot be explained by the new Act which left the male franchise unaltered apart from a trifling addition—approximately 3,700—in respect of men registered in respect of their wives' occupation of business premises, and must be mainly ascribed to the special procedure, adopted for the first time in connection with the 1929 register, of the service of a compulsory form of return which disclosed and made good omissions from the registers on the pre-1928 Act franchise.

Table CXVIII.—Parliamentary and Local Government Electors, 1918-1936.

Register.	Parliamentary Register (including University Constituencies).					Local Government Register.		
	Persons.	Males.	Females.	Business Premises Qualifica- tions. — Males only up to 1928. Persons from 1929 (included in Cols. b-d).	Persons on Absent Voters' List (included in Cols. b-d).	Persons.	Males.	Females.
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>k</i>
1918 (Autumn)	17,222,983	10,281,054	6,941,929	159,013	3,362,028	13,930,130	6,998,665	6,931,465
1919 "	17,465,638	10,234,887	7,230,751	205,461	1,157,061	14,361,123	7,176,019	7,185,104
1920 "	17,584,552	10,176,750	7,407,802	203,471	254,866	14,712,453	7,364,912	7,347,541
1921 "	17,795,784	10,237,344	7,558,440	194,737	185,227	15,019,348	7,527,861	7,491,487
1922 "	18,001,692	10,312,248	7,689,444	199,904	162,901	15,322,625	7,700,108	7,622,517
1923 "	18,388,833	10,498,179	7,890,654	208,694	151,953	15,691,962	7,873,461	7,818,501
1924 "	18,806,842	10,719,922	8,086,920	211,257	165,564	16,015,033	8,007,384	8,007,649
1925 "	19,167,275	10,897,545	8,269,730	217,509	167,406	16,345,290	8,157,607	8,187,683
1926 "	19,346,954	10,982,128	8,364,826	206,199	161,460	16,574,549	8,284,181	8,290,368
1927 "	19,585,972	11,094,031	8,491,941	205,538	155,436	16,865,666	8,444,718	8,420,948
1928 "	19,866,649	11,226,396	8,640,253	205,793	154,432	17,179,487	8,608,017	8,571,470
1929 (Spring)	25,095,793	11,866,794	13,228,999	371,594	174,731	18,620,395	8,825,225	9,795,170
1930 (Autumn)	25,730,507	12,101,108	13,629,399	364,762	174,270	18,879,147	8,905,768	9,973,379
1931 "	26,135,944	12,288,852	13,847,092	365,090	174,274	19,156,018	9,036,870	10,119,148
1932 "	26,439,713	12,440,109	13,999,604	367,684	172,234	19,418,156	9,160,409	10,257,747
1933 "	26,715,526	12,578,340	14,137,186	365,734	168,684	19,659,678	9,274,801	10,384,877
1934 "	27,031,162	12,735,465	14,295,697	367,912	166,102	19,984,911	9,428,765	10,556,146
1935 "	27,395,836	12,911,650	14,484,186	367,797	164,751	20,352,389	9,602,772	10,749,617
1936 "	27,723,561	13,067,627	14,655,934	366,835	165,911	20,712,367	9,770,974	10,941,393

Including a certain amount of plural representation in the case of those persons registered in more than one constituency by reason of their possessing the necessary residence or business qualification, or being entitled to be registered in respect of a University constituency, the total Parliamentary electorate of 27,723,561 represents 67·9 per cent. of the estimated total population, or 66·7 per cent. of the male and 69·0 per cent. of the female population; in the case of the rather more restricted Local Government franchise, the numbers are somewhat less and the proportions

correspondingly lower, the total electorate being 50·7 per cent. of the whole population, or 49·9 per cent. and 51·5 per cent. in the case of males and females separately.

Of the total of the Parliamentary Register, the bulk, viz. 27,610,314, represents the aggregate voting strength in the 509 geographical constituencies into which England and Wales is divided, the balance of 113,247 representing the five University constituencies. Eleven of the Boroughs, and three University constituencies, however, each return two members, so that the total representation in Parliament is by 528 members, 520 in respect of the geographical divisions, with an average electorate of 53,097 per member and eight in respect of the Universities, with an average electorate of 14,156.

MISCELLANEOUS.

Other tables appearing in Part II of the Statistical Review which have not formed the subject of special comment in the foregoing pages are :—

Table W, showing the Population, Births, Deaths, Infant Mortality and Marriages, with Rates in British Islands and Dominions, 1936.

Tables X and Y, showing the census populations respectively of the British Empire, Dominions, etc., and of Foreign Countries.

Appendix, showing changes in boundaries of various local government districts and the areas and populations involved.

WEATHER OF THE YEAR 1936. ENGLAND AND WALES.

(Contributed by the Air Ministry.)

The year 1936 was dull, and rather wet on the whole and severe gales occurred locally at times. Among notable features were the extensive floods in early January, the long drought locally in south and east England during the end of April and the first three weeks of by large hailstones and intense falls of rain, in June and July, the unusually dry August, the widespread, persistent and sometimes dense fog which occurred between November 19th and 28th and the considerable flooding resulting from heavy rain which fell during the middle period of December.

Mean temperature for the year differed little from the average. Marked deviations from the average occurred, however, at different periods; interesting cold spells included January 12th–23rd, February 3rd–5th and 8th–14th, April 12th–23rd and October 10th–14th and among warm spells were June 19th–22nd and August 23rd–31st. The period September 1st–25th was also warm, with some unusually

high night minima, while March 19th–31st was mild. Temperature in the screen fell to 9° F. locally on January 19th and to 7° F. at Rickmansworth on February 12th. July was cool in the southern half of the country; at a number of stations the mean temperature was 2° F. or more below the average. The deficiency was mainly due to persistently cool days, the scarcity of really warm days being a striking feature of the weather of July. The spell June 19th–22nd was very warm and at a majority of stations either June 20th or 21st provided the highest temperature of the year. The warm spell August 23rd–31st was very pleasant; individual maxima, though high, were not exceptionally so and a large diurnal range was experienced at times. The extreme temperatures for the year were 89° F. at London (Camden Square) on June 20th and 21st and 7° F. at Rickmansworth on February 12th.

The year was wet over England and Wales as a whole, the percentage of the average for the period 1881–1915 being 109. Less than the average rainfall was confined mainly to the neighbourhood of the Bristol Channel, parts of north-west England and a few small isolated areas elsewhere, while less than 90 per cent. of the average occurred locally in Glamorgan and near Bideford, N. Devon. More than 120 per cent. of the average occurred in some areas in the Midlands, north Wales, and at a few other rather isolated places, while more than 130 per cent. was received locally in north Wales. With regard to individual months, over England and Wales as a whole the wettest months were January and July with 5·3 in. and 5·5 in. and the driest months were May and August with 1·2 in. and 1·3 in. respectively. Of the remaining months more than the average was recorded in February, June, September and November and less than the average in March, April, October and December. The intense falls of rain recorded locally in thunderstorms during June and July were noteworthy, while floods resulted from the heavy rain which fell during the middle period of December.

Sunshine was deficient except at a few individual stations in northern districts. In some areas, particularly in the southern half of the country, the deficiency was notable; for example, at Eastbourne it was the duller year since 1913 and at Ross-on-Wye since 1920, while the totals at Rothamsted, Shoeburyness, Lympne and Croydon were the lowest since records were first taken in 1891, 1919, 1921 and 1922 respectively. For England and Wales generally, compared with the average the sunniest months were February, August, October and December and the duller March, July and September. April was sunny in northern districts and abundant sunshine was enjoyed generally during the period August 22nd–29th, while December was unusually sunny, especially in the eastern half of the country and the Midlands; at Dover, Gorleston and Shoeburyness, it was the sunniest December since records were first taken in 1907, 1908 and 1919 respectively. On the other hand, March, July and September were exceedingly dull; at Southport it

was the dullest March since records were first taken in 1892 and at Oxford and Kew Observatory September was the dullest month of that name in records back to 1881 and 1880 respectively.

Further information.—Tables relating to meteorological elements are given in Part I (Tables 30–32). A description of the weather of each month appears in the Quarterly Return of the Registrar-General and a summary of the observations at Greenwich for each month of the year appears in Table XI of the Return for the fourth quarter.

Charts showing the distribution of pressure, temperature, sunshine and rainfall for the year, together with summaries of the observations at numerous stations will be found in the Annual Summary of the Monthly Weather Report issued by the Meteorological Office.

A list of the publications of the Meteorological Office will be found in "List M" issued by H.M. Stationery Office.